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EDITORS AND CONSULTANTS

The Philippine Heart Center Journal is published by the Philippine Heart Center.

Editorial

Over the past 45 years, the Philippine Heart Center has nurtured more than 1,206 graduates in the cardiovascular & allied medical specialties. With their academic training, many if not all of the graduates have made continue to make significant contributions to society both locally and internationally.

The Education, Training and Research Services continues to encourage all cardiovascular trainees and consultants to conduct researchesthat have impact and relevance to uplifting the cardiovascular burden of the country.

This PHC Journal Suppliment of over 200 Abstracts are fruits of the relentless efforts of the House Staff with the tutelage of the Clinical Trials and Research Division under the Cliniical Research Department as well as the Institutional Ethics & Review Board.

I take my hats to all the research investigators and to all the research support staff. Your work leaves an indelible imprint in the pages of the PHC Journal. PHC stands proud and tall because of your valuable contribution.

The Education, Training & Research Services share the joy and honor in being part of the 45th celebration of the family that is the Philippine Heart Center.

MARIA BELEN O. CARISMA, MD, MBAH
Deputy Executive Director
Education, Training & Research Services

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PHC.R.069.09	Empiric Monitoring of Activated Clotting Time (ACT) versus Non ACT Monitoring Prior to Cardiopulmonary Bypass: a Cohort Study	Edwin M. Valencia, MD; Merceditas Althea D. Quinon, MD; Reynante T. Gamponia, MD
PHC.R.071.09	Surgical Treatment of Coronary Artery Fistula: Philippine Heart Center Experience	Samuel Anthony R. Yadao, MD
PHC.R.075.09	Effect of the Implementation of Point-of-care Satellite Laboratory on Tests Turnaround Time: the Philippine Heart Center - Emergency Room Experience	Roselle Tejano-Tolentino, MD; Arlene M. De Luna, MD; Felipe S. Templo, MD
PHC.R.076.09	Long Term Outcome of Aortic Valve Regurgitation After Repair of Ruptured Coronary Sinus of Valsalva: PHC Experience	Samuel Anthony R. Yadao, MD; Reynante Gamponia, MD
PHC.R.001.10	The Prognosis Value of Red Blood Cell Distributed Width in Predicting Major Adverse Cardiovascular Events Among Patients with Acute Coronary Syndrome	Emillie V. Aya-ay, MD; Helenne Joie M. Brown. MD; Arlene M. De Luna, MD
PHC.R.007.10	The Association of Smoking and Pulmonary Tuberculosis in Filipino Adults	Irene P. Villanueva-Felipe, MD; Ma. Encarnita Blanco-Limpin, MD; Fernando G. Ayuyao, MD
PHC.R.008.10	The Red Cell Transfusion Practice in Isolated CABG Patients Stratified as Low, Moderate and High Risk Groups Based on Blood Transfusion Risk Scoring at the Philippine Heart Center	Harold Joseph C. Lumang, MD; Florian Nuevo, MD; Renato Pacis, MD; Veronica Durante, MD

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PHC.R.009.10	Effects of Varying Hypothermic Cardio pulmonary Bypass Perfusion Temperatures in Early Postoperative Renal Function on Patients Undergoing On-Pump Coronary Artery Bypass Grafting: the Philippine Heart Center	Bernard-Julius A. Rocha, MD; Chris topher C. Cheng, MD
PHC.R.010.10	Frequency and Severity of Myocardial Perfusion Abnormalities Using Single-Photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging in Patients with Metabolic Syndrome with Suspected Coronary Artery Disease	Angelin F. Apostol, MD; Jerry M. Obaldo, MD
PHC.R.014.10	Diagnostic Accuracy of Ultrasound in Differentiating Focal Fat Sparing and Neoplastic Nodules in Patients with Fatty Infiltration of the Liver Using Computed Tomography Scan as Reference Standard	Cherry Rose Taguba-Banez, MD, Marvin T. Tamaña, MD
PHC.R.015.10	Comparison of the Correlation of the RDPA/Tracheal Index in Upright Chest Radiograph and Estimated Pulmonary Artery Pressure Derived by Loud Turner Method with Pulmonary Artery Pressure Derived From 2D Echocardiography in Patients with Mitral Valve Disease	Antero O. Riel, MD; Harold L. Tan, MD
PHC.R.016.10	Preoperative Risk Scoring System for Infants and Young Children Undergoing Cardiothoracic Surgery (PREdict): a Proposed Risk Stratification Methods to Predict Postoperative Pulmonary Complications in Children Six Years Old Below Undergoing Cardiothoracic Surgery at the Philippine Heart Center	Maria Nina F. Banque, MD; Ma. Dulce Requiron-Sy, MD; Maria Nerissa Atienza-De Leon, MD; Milagros Salvani-Bautista, MD; Ma. Encarnita Blanco-Limpin, MD
PHC.R.017.10	Effect of Oxygen Challenge Test Response to Postoperative Outcome Among Congenital Heart Disease Patients with Moderate to Severe Pulmonary Hypertension	Areefah A. Adiong, MD; Kathleen F. Sabiniano, MD; Efren Vicaldo, MD
PHC.R.018.10	Association Between the Different Levels of Oxygen Therapy and the Rate of Resolution of Pneumothorax in Pediatric Patients Who Underwent Cardiothoracic Surgery	Julie Iris Z. Capistrano-Clapano, MD; Ma. Dulce Requiron-Sy, MD; Milagros S. Bautista, MD; Ma. Nerrisa A. De Leon, MD; Ma. Encarnita B. Limpin, MD
PHC.R.019.10	The Accuracy of the EUROSCORE in the Prediction of 30-day Mortality in Adult Coronary Artery Bypass Graft Patients at the Philippine Heart Center	Leilani G. Adarna, MD: Wilfred Dee, MD; Noe Babilonia, MD
PHC.R.021.10	Pre-operative and Intra-operative Parameters Predictive of Neurological Sequelae in Pediatric Patients Undergoing Bidirectional Glenn Shunt	Kim Martin G. Tolentino, MD Ma. Bernadette A. Azcueta, MD
PHC.R.022.10	The Association of QT Dispersion with the Development of Congestive Heart Failure in Post-Acute Myocardial Infarction Patients at the Philippine Heart Center	Rowena Tianero-Rocha, MD; Sylvie Gunigundo MD; Ma. Belen Carisma, MD
PHC.R.023.10	The Association of Post-operative Glucose Levels with Clinical Out comes of Cardiac Surgery Patients	Romeo G. Molano, Jr., MD; Jose Melanio T. Grayda, MD
PHC.R.024.10	Prevalence of Pulmonary Thromboembolism in Chronic Mitral Valve Disease with Moderate to Severe Pulmonary Hypertension at the Philippine Heart Center	Maria Lourdes C. Malilay, MD; Ma. Teresa Abola, MD; Noe A. Babilonia, MD
PHC.R.025.10	Clinical Significance of Fasting versus Non-fasting Triglyceride Level as a Predictor of Major Adverse Cardiac Events (MACE) in Patients Treated with Percutaneous Coronary Intervention	Consuelo C. Tan, MD; Gilbert Vilela, MD
PHC.R.026.10	A Randomized, Placebo-controlled Trial on the Effect of Allopurinol in Exercise Tolerance of Patients with Chronic Stable Angina at the Philippine Heart Center	Aura D. Troncales, MD; Marcelito Durante, MD; Noel Babilonia, MD
PHC.R.027.10	Mean Carotid Intima-Media Thickness Among Healthy Adult Filipinos	Crispino M. Ibuan, Jr. MD; Norberto Tuaño, MD

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PHC.R.028.10	The Accuracy of Chest Radiograph in Detecting Bronchiectasis with High Resolution Computed Tomography as Reference Standard	Gervin Brian D. Espino, MD; Alfred Villarosa, MD; Harold Tan, MD; Aileen Guzman-Banzon, MD, Orlando Ignacio, MD
PHC.R.029.10	The Post-operative Echocardiographic Parameters of Pediatric Patients with Ventricular Septal Defect with Aortic Regurgitation Who Underwent Aortic Valve Repair at the Philippine Heart Center from January 2000 to July 2010	Francisco Emilio Remotigue Jr., MD; Ma. Lourdes SR. Casas, MD; Jhuliet J. Balderas, MD; Magdalena Lagamayo, MD; Ma. Bernadette Azcueta, MD
PHC.R.030.10	Burden of Smoking in Acute Coronary Syndrome	Edelweise G. Merin, MD; Maria Encarnita Limpin, MD
PHC.R.031.10	Association of Medical Research Council Dyspnea Scale to the Quality of Life Among COPD Patients	Stefanni Nonna M. Paraguas, MD; Ma. Encarnita B. Limpin MD
PHC.R.032.10	Baseline High-Density Lipoprotein Cholesterol as a Predictor of Major Adverse Cardiac Events After Elective Percutaneous Coronary Stenting Among Filipinos	Jun Maximo F. Lasco II, MD; Gilbert Vilela, MD
PHC.R.033.10	Association of Adherence to American College of Cardiology/ American Heart Association/ESC 2006 Guidelines for the Management of Chronic Atrial Fibrillation on Stroke Prevention and Rate or Rhythm Control with Outcomes	Lala Ann F. Bambico, MD; Erdie Fadreguilan, MD
PHC.R.034.10	Relationship of Perioperative Serum Electrolyte Levels in the Development of Postoperative Arrhythmias Among Patients Who Underwent Open-Heart Surgery	Rovi Raymond Z. Enerva, MD; Erdie Fadreguilan, MD
PHC.R.035.10	The Correlation of the Burden of Smoking and COPD Severity Among Patient in Philippine Heart Center	Josephine B. De Leoz, MD; Joseph Hope Cal, MD; Aileen Guzman-Banzon, MD; Teresita S. De Guia, MD
PHC.R.036.10	Cardiovascular Profile and Risk Factors of Filipino Patients with Infra-renal Abdominal Aortic Aneurysm at the Philippine Heart Center from January 2005 to March 2012	Paul Lucas, MD; Norberto Tuaño, MD
PHC.R.038.10	Factors Affecting Spirometry Results in Patients with Valvular and Congenital Heart Disease after Cardiac Surgery	Fatima Kathrina B. Magpantay, MD; Maria Encarnita Limpin, MD; Teresita S. De Guia, MD; Fernando G. Ayuyao, MD
PHC.R.040.10	The Accuracy of Chest Radiograph in Diagnosing Left Ventricular Systolic Dysfunction Using 2D Echocardiography as the Reference Standard	Olga Nicole F. Cedro, MD; Sarah Victoria L. Zambaga, MD; Emmet V. Ladlad-Pua, MD; Orlando R. Ignacio, MD
PHC.R.041.10	Correlation of Electrocardiographic and Echocardiographic Findings on RV Size Among Children with Atrial Septal Defect	Jose Melvin C. Cosep, MD; Eden D. Latosa, MD; Juliet J. Balderas MD; Magdalena Lagamayo, MD
PHC.R.042.10	Comparison Between the NERS (New Risk Stratification) Score and the SYNTAX (Synergy Between Percutaneous Coronary Intervention With Taxus and Cardiac Surgery) Score in Outcome Prediction for Patients with Coronary Artery Disease with Triple Vessel Disease Who Underwent PCI	Eleazar P. Daet, MD; Rhandy Panganiban, MD
PHC.R.043.10	Association Between Peri-operative Routine Platelet Transfusion Practice and Mortality During Open Heart Surgery in Philippine Heart Center: a Retrospective Study	Mea Lovella B. Clara, MD; Luis Raymond T. Go, MD
PHC.R.044.10	Determinants of Outcome in Neonates Undergoing Modified Blalock-Taussig Shunt: a Philippine Heart Center Experience	Marvin D. Martinez, MD; Reynante Gamponia, MD; Merciditas Althea Quinion, MD; Gisel Catalan, MD; Ronnie Cacas, MD

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PHC.R.046.10	A Validation Study on Bedside Estimation of Risks as an Aid for Decision Making in Valve Surgery at the Philippine Heart Center: a Prospective Cohort	Kristine C. Somintac, MD; Santos Jose Abad, MD
PHC.R.049.10	Off-Pump Glenn Shunt, the Philippine Heart Center Experience: a case series	Ramiro Thadeus P. Pablo, MD
PHC.R.001.11a	Comparison of International Normalized Ratio (INR) Between Point-of-Care Testing Analyzer Coaguchek XS and Standard Laboratory Method Among Patient on Warfarin	Spencer S. Watanabe, MD; Frederick R. Llanera, MD
PHC.R.001.11b	Off-pump Coronary Artery Bypass Surgery for Left Main Coronary Artery Involvement	Bernard M. Baluga, MD; Avelino L. Aventura, MD; Lorenzo Rommel G. Cariño, MD; Renato Villanueva, MD
PHC.R.002.11b	EuroSCORE and Cardiac Troponin as Predictor of Clinical Outcome After Valve Surgery	Melissa R. Cundangan MD; Normita Manapat, MD
PHC.R.003.11	Urine RBC and WBC Studies: a comparison between the manual method and the IQ200 Irish Automated Urine Microscopy Analyzer	Dinarazad D. Miranda, MD; Frederick R. Llanera, MD
PHC.R.006.11	Association Between Peri-operative Routine Platelet Transfusion Practice and Mortality During Open Heart Surgery in Philippine Heart Center: a cohort study	Mea Lovella B. Clara, MD; Luis Raymond T. Go, MD
PHC.R.008.11	Mixed Venous Oxygen Saturation as a Predictor of Outcome Following Open Heart Surgery in Pediatric Patients with Congenital Heart Disease	Bernadette B. Valdez, MD; Ma. Bernadette A. Azcueta, MD
PHC.R.010.11	A Comparison Between Insertion and Non-Insertion of Chest Tube after PDA Closure Among Pediatric Patients	Jetz-Marion P. Cruz, MD; Ramon O. Ribu, MD
PHC.R.012.11	A Cohort Study on the Use of Absorbable Sutures versus Steel Wires in Sternal Closure in Pediatric Patients after Cardiovascular Surgery: a Philippine Heart Center Experience	Jay F. Alejandre, MD; Reynante T. Gamponia, MD; Karyn P. Luna, MD
PHC.R.013.11	Correlation of CT-Scan Tracheal Parameters with Pulmonary Function Test in Patients with COPD	Kristine Ivy A. Riel, MD; Alfredo Villarosa, MD; Carolina A. Drilon, MD
PHC.R.016.11	Correlation of Nutritional Status Using Subjective Global Assessment (SGA) on Pulmonary Function Parameters in Patients with COPD at the Philippine Heart Center	Cristito B. Alea, MD; Ma. Paz Mateo, MD; Teresita De Guia, MD
PHC.R.017.11	Accuracy of Handheld Spirometry as a Comparable Diagnostic Tool to Pulmonary Function Testing	Jessamine C. Dacanay, MD; Ma. Encarnita Limpin, MD
PHC.R.018.11	Evaluation of Properties of the COPD Assessment Test (CAT) vs SGRQ in Predicting Severity of COPD by GOLD Criteria	Marie Grace Luancing, MD
PHC.R.020.11	Lung Flute in the Management of Pneumonia in Children	Ma. Regina T. Alvarez, MD; Anjanette R. De leon, MD; Ma. Dulce Requiron-Sy, MD; Maria Encarnita B. Limpin, MD; Milagros S. Bautista, MD
PHC.R.021.11	Pulmonary Tuberculosis in Filipino Children with Congenital Heart Disease at Philippine Heart Center	Charo N. Francisco, MD
PHC.R.024.11	Right Ventricular Strain Rates as Predictor of Outcome of Patients with Mitral Stenosis After Mitral Valve Surgery	Delfin C. Barrion, MD; Ana Beatriz Medrano, MD; Leonard Warren Rondilla, MD
PHC.R.025.11	Association of Non-alcoholic Fatty Liver Disease with Coronary Artery Disease	Jennifer Ann L. Cantre, MD; Noe A. Babilonia, MD
PHC.R.030.11	The Association Between Hypertensive Retinopathy and Coronary Artery Disease in Patients Undergoing Coronary Angiography	Desi James B. Ojascastro, MD; Ronaldo Estacio, MD

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PHC.R.031.11	Speckle Tracking Imaging Strain and Strain Rate as Predictors of Major Adverse Cardiac Events Among Patients with Stable Coronary Artery Disease (CAD) Who Underwent Percutaneous Coronary Intervention	Jomer V. Mendeguarin, MD; Ana Beatriz R. Medrano, MD; Edwin S. Tucay, MD; Frederick Vicente, MD; Noe A. Babilonia, MD
PHC.R.032.11	The Association of Blood Uric Acid Level with Endothelial Dysfunction in Patients with Peripheral Arterial Disease	Alano T. Olivas, MD; Ma. Teresa B. Abola, MD
PHC.R.033.11	Factors Affecting Outcomes in Medically Treated Patients with Severe Aortic Regurgitation	Donna Mae J. Ilio, MD; Normita Manapat, MD; Noel A. Babilonia, MD
PHC.R.034.11	Predictors of Restenosis after Percutaneous Balloon Mitral Valvuloplasty	Raymund Darius Liberato, MD; Alexander Ang, MD
PHC.R.035.11	Predictors of Persistent Pulmonary Hypertension After Mitral Valve Surgery	Mia M. Sasondoncillo-Nadal, MD; Santos Jose Abad, MD
PHC.R.036.11	Factors Associated with Clinical Outcomes of Gravidocardiac Patients	Aida P. Maranian, MD; Myla Gloria S. Supe, MD
PHC.R.038.11	A Comparative Study of the Analgesic Efficacy of Intravenous Oxycodone versus Intravenous Tramadol in Preventing Postoperative Pain in Patients Undergoing Coronary Artery Bypass Grafting Surgery at Philippine Heart Center	Rosa Francia M. Manalaysay, MD; Renato Pacis, MD
PHC.R.039.11	Correlation of Left Ventricular Mass Between Quantitative ECG-gated Myocardial SPECT and 2-Dimensional Echocardiography	Arnel E. Pauco, MD; Myla Gloria S. Supe, MD; Jerry M. Obaldo, MD
PHC.R.001.12	Prognostic Value of Coronary Flow Reserve by Dipyridamole SPECT Sestamibi Imaging Predicting Future Cardiac Events	Deverly D. Tumapon, MD; Jerry M. Obaldo, MD
PHC.R.002.12	The Association of Adult Cardiovascular Risk Factors for Coronary Artery Disease with Left Ventricular Mass Index and Left Ventricular Posterior Wall Diameter Among Filipino High School Students Ages 12–16 Years Old	Eloisa Victoria A. Claveria–Barrion, MD; Jhuliet J. Balderas, MD
PHC.R.003.12	The Association of Postoperative Hyperglycemia with Postoperative Infection Among Pediatric Patients Undergoing Open Heart Surgery	Emiliana A. Uniforme-Curameng, MD; Maria Dolores Victor, MD
PHC.R.004.12	Correlation of Airway Wall Thickness with Pulmonary Function Test in Patients with Chronic Obstructive Pulmonary Disease	Neilson C. Tino, MD; Joseph Leonardo Z. Obusan, MD
PHC.R.005.12	Correlation of Bronchial Wall Attenuation in Hounsfield Units with Pulmonary Function Test in Patients with COPD	Regina Cristina Q. Mangada, MD; Joseph Leonardo Obusan, MD
PHC.R.006.12	Effects of Propofol total Intravenous Anesthesia (TIVA) versus Combined Inhalational Anesthesia-Propofol on Post-Operative Troponin Level and Clinical Outcomes Among Cardiac Surgery Patients Under Cardiopulmonary Bypass	Felix Ruzen M. Fandinola, MD; Renato D. Pacis, MD
PHC.R.007.12	Association of Coagulation Test with Significant Postoperative Bleeding Among Pediatric Patients Undergoing Cardiopulmonary Bypass	Rogelyn F. Tapuro-Olais, MD; Ma. Bernadette A. Azcueta, MD
PHC.R.008.12	Relationship between Nutritional Stats, Respiratory Symptoms and Lung Function in Elementary School Children in Both Private and Public Schools	Bernadette A. Nisperos, MD; Maria Dulce Requiron-Sy, MD; Maria Encarnita B. Limpin, MD; Milagros S. Bautista, MD
PHC.R.010.12	The Association of Exposure to Second Hand Smoke and Other Social Factors toTuberculosis in Filipino Children	Mariannebelle P. Tablante, MD; Milagros S. Bautista, MD; Maria Dulce Requiron-Sy, MD; Maria Encarnita B. Limpin, MD
PHC.R.011.12	The Accuracy of a Portable COPD Screening Device in Detecting Obstructive Airway Disease	James Albert A. Flores, MD

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PHC.R.013.12	Effectiveness of the Clinical Practice Guidelines Compliance on the Outcome of Patients Who Developed Hospital Acquired Pneumonia in the Philippine Heart Center	Ethel M. Cabrera, MD; Aileen Guzman-Banzon, MD; Maria Encarnita B. Limpin, MD
PHC.R.015.12	Clinical and Procedural Outcomes of Patients Undergoing Coronary Angiogram Using Femoral versus Radial Access at Philippine Heart Center (PHC)	Irene L. Celedonio, MD
PHC.R.016.12	Diastolic Dysfunction as a Predictor of Outcome in Post Myocardial Infarction Patient with Preserved Left Ventricle Ejection Fraction	Thessie Minelli O. Valdez, MD; Ma. Bridget Donato-Fernandez, MD
PHC.R.019.12	Outcome of Pediatric Patients Who Underwent Tetralogy of Fallot Correction in Relation with the Surgical Technique Used in Relieving Right Ventricular Outflow Obstruction	Lorielyn G. Mandigma, MD; Ma. Bernadette A. Azcueta, MD; Jhuliet J. Balderas, MD; Corazon A. Estevanez, MD; Mercilyn Yap, MD
PHC.R.020.12	Predictive Value of 6-Minute Walk Distance on Major Adverse Cardiovascular Events 180 Days Post-discharge Among Acute Coronary Syndrome Patients	Roy Sasil Jr., MD; Glysa Sasil, RN; Edgardo E. Ebba, MD; Norberto O. Tuaño Jr., MD; Abner Koh, MD
PHC.R.022.12	The Clinical and Procedural Outcome of Patients Undergoing Trans-radial Approach versus Trans-femoral Approach in Percutaneous Coronary Intervention	Philipp C. Ines, MD; Norberto O. Tuaño, MD; James Ho Khe Sui, MD
PHC.R.023.12	Comparison of the Prognostic Value of the Global Risk Score and the Clinical Syntax Score in Predicting Outcomes of Patients Undergoing Percutaneous Catheter Intervention at the Philippine Heart Center	Lucky R. Cuenza, MD; Marianne P. Collado, MD
PHC.R.024.12	Adherence to Indexed EOA Calculation in Choosing Aortic Valve Size to Prevent Patient Prosthesis Mismatch in Patient Undergoing Aortic Valve Replacement	Janice Joan Santiago, MD; Edwin Tucay, MD
PHC.R.025.12	Association of ST Segment Changes in Lead aVR with the Six-Minute Walk Test Derived Functional Capacity Among Post-ST Elevation Myocardial Infarction Patients	Jehan Karen Go-Sumalpong, MD; Ramon F. Abarquez, Jr., MD
PHC.R.026.12	Clinical Predictors of In-hospital Survival Among Post-Cardiopulmonary Arrest Patients	Franz Albert Go, MD; Chito Permejo, MD
PHC.R.027.12	Hyperuricemia and Its Prognostic Value in Patients with Rheumatic Heart Disease	Paolo P. Villanueva, MD; Ana Beatriz Medrano, MD
PHC.R.031.12	Predictors of Mortality in Patients Undergoing Arterial Switch Operation in the Philippine Heart Center	Gerrylouie R. Abadies, MD; Reynante Gamponia, MD; Merceditas Quinon, MD
PHC.R.032.12	Clinical Outcome and Health Related Quality of Life in 2-hour versus 6-hour Sandbag Placement Among Post-Coronary Angiogram Patients in Philippine Heart Center	Francis Carl L. Catalan, MD; Liberty O. Yaneza, MD
PHC.R.033.12	Clinical Predictors of Perioperative Morbidity and Mortality in Post Mitral Valve Repair Patients in Philippine Heart Center	Paul Christian D. Delos Reyes, MD; Chito Permejo, MD
PHC.R.034.12	Clinical, Echocardiographic, and Hemodynamic Factors Affecting Success of Percutaneous Mitral Balloon Valvotomy	Debra P. Urbina, MD; Ramoncito Tria, MD
PHC.R.035.12	Association of Hyperuricemia with Carotid Intima Media Thickness (C-IMT) Among Hypertensive Patients with Normal Renal Function	Ma. Barbra A. Destajo, MD; Ana Beatriz Medrano, MD
PHC.R.036.12	Body Mass Index and Serum Albumin as Predictor of In-Hospital Morbidity and Mortality in Adult Patients with Acyanotic Congenital Heart Disease Admitted for Surgical Correction	Kristine Eder Koa, MD; Efren Vicaldo, MD; Ramon O. Ribu, MD
PHC.R.037.12	Clinical Outcome and Cost Analysis of Surgical and Transcatheter Closure of Patient Ductus Arteriosus Among Pediatric Patients at Philippine Heart Center	Bernadette B. Valdez, MD; Marites R. Flores, MD; Teofilo Cantre, MD
PHC.R.004.13	Correlation of Pulmonary Artery Measurements in Chest Radiographs with the Severity of Chronic Obstructive Pulmonary Disease	Raniel Joseph Bautista, MD; Dehuel Cuyacot, MD; Sarah Victoria L. Zampaga, MD

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PHC.R.005.13	Correlation of Radiologic Signs of Left Atrial Enlargement with Left Atrial Volume Index	Julius Zoilo Z. Oliveros, MD; Roy M. Sasil, MD; Cheryl K. Fomaneg, MD; Sarah Victoria L. Zampaga, MD
PHC.R.007.13	The Association of Body Mass Index (BMI) to Asthma Control in Adults	Jasmine I. Tan-Pastor, MD; Aileen Guzman-Banzon, MD; Ma. Encarnita B. Limpin, MD
PHC.R.008.13	Correlation of End-Tidal Carbon Dioxide by Capnography and Carbon Dioxide by Arterial Blood Gas Among Mechanically Ventilated Patients After Cardiothoracic Surgery at Philippine Heart Center	Keena P. Magallanes, MD; Dulce Requiron-Sy, MD; Maria Encarnita B. Limpin, MD
PHC.R.009.13	Validation of Forced Expiratory Volume at 6 Seconds of Exhalation (FEV6) in the Detection of Small Airway Disease	Edgardo D. Tiglao, Jr., MD; Aileen Guzman-Banzon, MD; Ma. Encarnita B. Limpin, MD
PHC.R.010.13	Effect of Thoracentesis in the Respiratory Mechanics and Gas Exchange Among Mechanically Ventilated Patients with Different Types of Pleural Effusion	Karen G. Sobere-Yu, MD; Teresita S. De Guia, MD; Maria Encarnita B. Limpin, MD; William E. Del Poso, MD
PHC.R.011.13	Association of Nutritional Status Using Mini Nutritional Assessment Short Form (MNA®-SF) with Risk of Exacerbation Among Elderly COPD Patients	Peter Ian B. Tabar, MD; Aileen Guzman-Banzon, MD; Ma. Encarnita B. Limpin, MD
PHC.R.012.13	Validation of the HEART Score System in Emergency Department Patients with Chest Pain and Possible Acute Coronary Syndrome	Jericho C. De Leon, MD; Chito C. Permejo, MD
PHC.R.014.13	Association of Patient Factor with Vascular Complication Among Adult Patients Who Underwent Intra-Aortic Balloon Pump Insertion	Jeremiah Butch T. Gemarino, MD; Ma. Consolacion Dolor-Torres, MD
PHC.R.015.13	Utility of Cardiac Apex Indices on Chest Radiograph in Determining Ventricular Enlargement Among Pediatric Patients	Sarah Jane Villanueva-Mejia, MD; Marvin T. Tamaña, MD
PHC.R.018.13	Comparison of ECG Parameters (Fragmented QRS, Left Atrial Enlargement and Right Bundle Branch Block) in Predicting the Severity of Rheumatic Mitral Stenosis	Christian Allan T. Comandante, MD; Richard Torres, MD
PHC.R.019.13	The Effect of the Philippine Heart Center (PHC) Heart Failure (HF) Clinic Program on the Incidence of Mortality and Hospital Re-admission	Ada Cherryl L. Jayme, MD; Liberty O. Yaneza, MD
PHC.R.021.13	Diastolic Dysfunction as Predictor for Post-Operative Atrial Fibrillation (POAF) in Coronary Artery Bypass Graft (CABG) Patients	James C. Catoto, MD; Maria Christie Mendoza-Reyes, MD
PHC.R.022.13	Comparison of Outcomes of Coronary Artery Bypass Graft Surgery and Percutaneous Coronary Intervention in Patients with Chronic Kidney Disease	Melinda Ellaine A. Vencio, MD; Ma. Consolacion Dolor-Torres, MD; Rhandy P. Panganiban, MD
PHC.R.023.13	Comparison of Kidney Functions in Patients with Chronic Kidney Disease Stage III-V and Coronary Artery Disease After Percutaneous versus Surgical Revascularization	Aleano L. Dayag, MD; Chito Permejo, MD; Agnes Mejia, MD
PHC.R.024.13	Factors Associated with Embolism in Patients with Atrial Myxoma: a Case Control Study	Jenny-Lynn V. Juhuri, MD; Liberty O. Yaneza, MD
PHC.R.025.13	Sagittal Abdominal Diameter (SAD) as Predictor of Coronary Artery Disease Among Filipino Adults	Rolando P. Romance, Jr., MD; Ma. Consolacion Dolor-Torres, MD
PHC.R.027.13	Effect of Exercise Training on Echocardiographic Parameters of Heart Failure Patients with Low Ejection Fraction	Rowena Barrito-Amador, MD; Richard Torres, MD; Leandro C. Bongosia, MD; Areefah A. Adiong, MD; Mea Lovella Clara, MD; Katrina Mae Gamponia, MD
PHC.R.031.13	Outcome of Autologous Blood Tranfusion (Cell Saver) vs. Traditional Blood Transfusion in Coronary Artery Bypass Patients	Stewart S. Santos, MD; Jay Junio, MD; Christopher C. Cheng, MD

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PHC.R.037.13	Correlation of the Mixed Venous Oxygen Saturation (SvO2) to the Hemoglobin-Based Transfusion Trigger in Post-CABG Patients	Catherine Y. Gonzales-Duazo, MD; Florian R. Nuevo, MD
PHC.R.038.13	A Cross-Sectional Study on the Venous-Arterial PCO2 Gap as a Surrogate Parameter to Assess the Adequacy of Tissue Perfusion During the Immediate Post-Operative Period in the CABG Patients	Darwin James G. Alvarez, MD; Florian R. Nuevo, MD
PHC.R.040.13	Association of Total Eosinophilic Count with the Development of Congestive Heart Failure with Acute Myocardial Infarction	Ivie Joyce U. Kong, MD; Frederick S. Gabriel
PHC.R.004.14	Triple Valve Surgery: Preoperative Factors that Affect the Inhospital Mortality Rate for Triple Valve Surgery	Gerrylouie R. Abadies, MD; Samuel Andin, MD
PHC.R.005.14	Correlation of Computed Tomography Thoracic Cage Ration with Pulmonary Function Tests in Patients with Chronic Obstructive Pulmonary Disease	Ed Gelmark S. Mercado, MD; Bernadette E. Magnaye, MD; Joseph Leonardo Z. Obusan, MD
PHC.R.006.14	Off-site Diagnosis of Acute Dissecting Aortic Aneurysm Through a Video Conference App Using A Mobile Smart Phone and a Tablet Device	Niño Anthony P. Tanseco, MD; Alfredo F. Villarosa, MD
PHC.R.007.14	Contrast-induced Nephropathy in Patients with Normal Serum Creatinine Undergoing Contrast Enhanced Computed Tomography: a comparison of Iodixanol and Iopamidol	Regina A. Delos Reyes, MD; Marvin T. Tamaña, MD; Agnes Dominguez-Mejia, MD
PHC.R.009.14	Preoperative Risk Factor Analysis for Operative Mortality of Patients who Underwent Mitral Valve Repair in Philippine Heart Center on 2001- 2010	Ali T. Macatanong, MD; Pio Purino, Jr., MD; Samuel Andin, MD
PHC.R.010.14	Predictors of Outcome of Children Undergoing VSD Surgical Closure at Philippine Heart Center: a 5-year review	Joanna E. Zamora-Java, MD; Virginia C. Mappala, MD; Ma. Bernadette A. Azcueta, MD
PHC.R.011.14	Outcomes of Patients with Moderate Ischemic Mitral Regurgitation Who Underwent CABG Alone versus CABG with Mitral Valve Surgery	Elmo S. Bombase Jr. MD; Christopher C. Cheng, MD
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PHC.R.003.15	Tetralogy of Fallot: Clinical Course of Post-Operative Total Correction a Ten-Year Follow-up	Mary Antoniette M. Lozada, MD; Ma. Bernadette A. Azcueta, MD
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PHC.R.013.15a	Clinical Profile of Patients with Non-Ischemic Cardiomyopathy Admitted at Philippine Heart Center	Jasmin H. Ampong, MD; James Ho, MD
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PHC.R.026.15	Validation of the Echo Heart Failure Score in Predicting Major Adverse Cardiac Events Among Patients with Heart Failure	Mary Jessil Pasag, MD; Melissa R. Cundangan, MD
PHC.R.031.15	Association of Clinical Characteristics and Electrocardiographic Changes with Presence of Multivessel Disease versus Single-Vessel Disease Among Patients with ST Elevation Myocardial Infarction-Acute Coronary Syndrome (STEMI-ACS)	Jhoanna G. Marcelo, MD; Neil D. Erguiza, MD; Dodee Nino Rigor, MD
PHC.R.032.15	Validation of a Predictive Score for Radial Artery Spasm in Patients Undergoing Elective Transradial Percutaneous Coronary Procedures	Joseph Michael L. Ramirez, MD; James Ho, MD
PHC.R.035.15	Association of Post-Procedural Echocardiographic Parameters with Outcomes in Rheumatic Mitral Stenosis with Aortic Valve Involvement Post-PTMC	Lilian Ville E. Bacalso, MD; Sharon Marisse A. Lacson, MD
PHC.R.037.15	Predictors of Resuscitation Outcomes with Global Assessment of Neurologic Status and Overall Survival in Sudden Cardiac Arrest (PROGNOSIS Cardiac Arrest): a prospective cohort study	Arvin R. Yumul, MD; Normita Manapat, MD; Rogelio Libarnes, MD; Joyce Jumangit, MD

Study Number	Title	Author
PHC.R.039.15	Clinical Profile of Congenital Heart Disease in Adolescents and Adults Ages 16 to 21 Years Old in the Philippine Heart Center: Early Experience of Grown-up Congenital Clinic	Sheryl Dell C. Reyes, MD; Ma. Virginia Mappala, MD; Jhuliet J. Balderas, MD
PHC.R.042.15	Incidence and Factors Associated with Pleural Effusion Among Pediatric Patients After Tetralogy of Fallot Correction	Donna Aileen V. Trovela, MD; Maria Dulce Requiron-Sy, MD; Maria Encarnita B. Limpin, MD
PHC.R.043.15	Predictors of Mortality in Filipinos with Acute Limb Ischemia III Undergoing Limb Amputation and Femoral Embolectomy	Elmo Bombase, MD; Edgar Tuazon, MD
PHC.R.047.15	Outcomes of Patients with Severe Pulmonary Hypertension and Mitral Valve Stenosis Following Mitral Valve Surgery in Philippine Heart Center	Mary Joy B. Malones, MD; Christopher C. Cheng, MD; Jetz-Marion Cruz, MD
PHC.R.049.15	Association of Central Venous Oxygen Saturation (SCVO2) on the Perioperative Outcome Among TOF Patients Undergoing Both Palliative and Corrective Surgical Procedures	Joanna C. Ronquillo, MD; Florian R. Nuevo, MD; Carina B. Dipasupil, MD
PHC.R.050.15	Valve Sparing Aortic Root Surgery via Aortic Root Remolding with External Root Annuloplasty: Preliminary Results in a Single Institution	Neil Christian P. Villamucho, MD; Aquileo C. Rico, MD; Nelson C. Lee, MD; Edgar S. Tuazon, MD; Marvin D. Martinez, MD; Anthony M. Manio, MD
PHC.R.052.15	Prognostic Valve of Reverse Redistribution on Stress Thallium-201 Myocardial Gated Single Photons Emission Computed Tomography in Patients who Underwent Percutaneous Coronary Intervention	Danieson R. Lampano, MD; Jerry M. Obaldo, MD
PHC.R.053.15	A Comparison Between Dexmedetomidine and Midazolam as Post-Operative Sedative in Pediatric Patients After Cardiac Surgery	Sarah Celeste DC. Angeles, MD; Carina B. Dipasupil, MD; Florian Nuevo, MD
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PHC.R.059.16	In-Hospital Mortality Rate of Post-CABG Patients from 2011 to 2015 in the Philippine Heart Center	John Andrew M. Yam, MD; Christopher C. Cheng, MD; Avenilo L. Aventura, MD
PHC.R.061.16	The Use of Modified Del Nido Cardioplegia Solution in Coronary Artery Bypass Grafting Surgery in the Philippine Heart Center	Jaysum Vak P. Ligue, MD; Ronnie G. Casas, MD
PHC.R.010.17	Utility of Thoracoscore in Predicting the Risk of Death and Prolonged Mechanical Ventilation Among Patients Undergoing Cardiothoracic Surgeries	Cristia Maysol T. Maderazo Morales, MD, Aileen G. Banzon, MD, Ma. Encarnita Blanco-Limpin, MD, Romel DR. Bayot, MD
PHC.R.011.17	Airflow Obstuction in Bronchiectasis: the Association Between the Types of Bronchiectasis and Pulmonary Function Tests	Ronald D. Palma, MD; Rencelle Faustino-Ballenes, MD; Ma. Encarnita Blanco-Limpin, MD; Aileen G. Banzon, MD
PHC.R.028.17	Utility of Tidal Breathing Analysis Among Children with Suspected Asthma	Florangel P. Avellana, MD; Ma. Dulce Requiron-Sy, MD; Ma. Encarnita B. Limpin, MD; Charito Delos Santos, MD
PHC.R.030.17	Utility of TBA in Assessing Reversibility to Bronchodilator in Children <6 Years Old Diagnosed To Have Doubtful Asthma and Probable Asthma	Brenda Lou Lovely Noel-Abanilla, MD; Ma. Dulce Requiron-Sy, MD; Charito C. Delos Santos, MD; Ma. Encarnita B. Limpin, MD
PHC.R.056.17	Accuracy of Fractional Exhaled Nitric Oxide (FeNO) Value in Predicting Post-Operative Airway Reactivity Among Children with Congenital Cardiac Anomaly	Mary Ann T. Enteria, MD; Ma. Dulce E. Requiron-Sy, MD; Ma. Nerissa De Leon, MD; Gari D. Astrologio, MD; Maria Encarnita B. Limpin, MD

PHC.R.002.07

The Clinical Profile, Angiographic Features and Outcomes of Patients with Acute Coronary Syndrome Who Underwent Emergency Coronary Angiogram at the Philippine Heart Center

Ian E. Guerrero, MD; Andres Baysa, MD

Background: Acute Coronary Syndrome encompasses the spectrum of unstable angina, NSTEMI and STEMI. Pivotal in the management of these patients is recognition of clear cut indications for early invasive strategy as it translates to better survival outcome and less complications. **Objective:** To present the clinical profile, angiographic features and outcomes of patients with acute coronary syndrome undergoing emergency coronary angiogram. **Study Design:** Retrospective, Descriptive done at the Philippine Heart Center from January 2005 – December, 2006. **Methods:** All patients seen at the emergency room of the Philippine Heart Center with a diagnosis of any of the acute coronary syndromes (NSTEMI, Unstable angina, STEMI) who subsequently underwent emergency coronary angiogram were included in the study. Excluded are those with chronic stable angina, elective coronary angiogram and non-CAD directed indications for coronary agiogram. Their baseline characteristics as to demographic data, risk factors and concomitant co-morbidities were likewise noted. Their clinical presentation and clinical indications requiring emergent coronary angiogram were reviewed and their corresponding coronary an giogram results were collated. Post-procedural outcomes will all be determined. All Data will be expressed in ratios and percentages and be represented in tabular and graphic form. **Results:** Ninety-six patients with diagnosis of acute coronary syndrome underwent emergency coronary angiogram. This represents 8.3% of the total coronary angiogram done during the period covered. NSTEMI remains to be the dominant diagnosis among the acute coronary syndromes. The incidence of ACS among the less than 60 year old is increased, of which STEMI is the dominant diagnosis. Men are affected more than women. Smoking history remains to be the biggest contributor in the risk for ACS. The most frequent manifestation requiring emergent coronary angiogram is persistent chest pain refractory to medical treatment. Majority have 2-vessel disease as angiogram findings of which the LAD territory is most commonly seen. There is no significant difference between those who underwent CABG vs. the PTCA making stent ing a promising alternative. Renal failure remains to be the most common post-procedural morbidity. **Conclusion:** The clinical profile, angiographic features and outcomes of patients with ACS who underwent emergency coronary angiogram are in consonance with internationally published data.

PHC.R.003.07

Compliance with Guidelines and Six Month Mortality in Patients with Acute Coronary Syndrome: PHC Experience

Leahdette O. Padua, MD; Maria Consolacion Dolor-Torres, MD

Background: In patients with Acute Coronary Syndrome (ACS), mortality can be predicted using risk-scoring systems. However, the impact of compliance to guidelines-based intervention is poorly documented. **Objectives:** This studies aims to determines, taking into consideration the patient's condition at admission, to what extent does the degree of compliance to the guidelines in the management of Acute Coronary Syndrome affect the early (six-months) all-cause mortality of patients admitted for ACS at Philippine Heart Center. **Methods**: A three-month registry war carried out in the Philippine Heart Center, prospectively including patients with ACS. Risk stratification based on initial presentation was calculated using the GRACE risk score while their compliance to the guidelines based intervention was computed using the compliance index, patients were followed at 6 months post-discharge. **Result:** A total of 134 patients, 38 ST elevation MI and 96 non-ST segment elevation ACS, were included. The mean GRACE risk scores were 107.8 ± 37.3 and 115.9 ± 32.6 for STEMI and non-ST elevation ACS, respectively. Their mean compliance index were 0.88 for STEMI and 0.87 for Non-ST Elevation ACS. Only 44 patients were followed-up yet as of this interim report. Three mortalities were noted, 1 from STEMI and 2 from Non-ST Elevation ACS. Compliance index was inversely related to the GRACE risk scores. **Conclusion:** In general, patients admitted to our institution for

Acute Coronary Syndrome had high compliance rate to the guidelines-based treatment strategies, particularly with the less expensive interventions treatment strategies. Majority belong to the intermediate risk category, based on their GRACE risk scores, with post-discharge to 6 months probability mortality of 3-8%. There exists and inverse relationship between the GRACE risk score and the level of compliance to guidelines-based management. We cannot speculate yet how the compliance to the guidelines and the GRACE risk score will affect mortality at 6-months post-discharge.

PHC.R.004.07

Comparison of Echocardiographic and Fluoroscopic Evaluation of Mitral Valve Calcification as a Predictor of Immediate Outcome of PTMC: a Prospective Cohort Study

Chito Permejo, MD; Rowena G. Cacas, MD

Background: Rheumatic mitral stenosis continues to be endemic in developing countries where mitral stenosis is the most frequent valve disease. Clinical evaluation is the first step when deciding whether to operate or intervene. Patient selection is fundamental in prediction of the immediate results of PTMC. The evaluation and selection of candidates for PTMC requires precise assessment of mitral valve pathology. This study attempts to evaluate the performance of echocardiography vs fluoroscopic evaluation of calcification as a predictor of outcome of PTMC. **Objectives:** The objectives were to determine the relationship between echocardiographic calcification score and procedural success of PTMC, as a predictor of immediate outcome, to determine the relationship between calcification score determined fluoroscopically and procedural success of PTMC, as a predictor of immediate outcome, and to compare echocardiographic and fluoroscopic assessment of mitral valve calcification as a predictor of immediate outcome of PTMC. **Methods:** This study is a prospective, Cohort study. At inclusion, all patients enrolled in the study, comprised predominantly of females (14/21) was described demographically and were analyzed based on their echocardiographic and fluoroscopic evaluation of mitral valve calcification. Echocardiographic score was derived from an analysis of mitral valve leaflet calcification based on Wilkins criteria. Fluoroscopic evaluation was done on the time of the procedure. The procedural success of PTMC was then correlated to the severity of mitral valve calcification determined echocardiographically and fluoroscopically and compared to determine if there is any correlation between the said variables as predictor of outcome. Pre-PTMC valve area showed a mean of 0.75 $\pm$ 1-0.4 with a narrowest dimension of 0.33 cm^2 and the widest valve area of 0.9 cm^2. post-PTMC valve area showed a mean valve area of 1.61 $\pm$ 1-0.2, the narrowest dimension being 1.34 cm^2. There was no significant difference in the valve area among the different calcification classifications on echocardiogram (p= 0.426) and fluoroscopy (p=0.769). Fifty-two (52) percent of the patients have calcification score of +2, or moderate calcification, (11/21) based on echocardiography. Fluoroscopy on the other hand showed a predominant score of 0, or no calcification, comprising 67% (14/21) of the total subjects. No subjects scored a +3 calcification based on fluoroscopy. Technical success was observed in all but one patient included in the study. **Conclusion:** The immediate follow-up on mitral valve area after PTMC clearly demonstrated that a good result is maintained on middle aged patients. The echocardiographic and fluoroscopic assessment of the valve calcification, however different, still points toward the trend of a successful procedure, grant ing moderate calcification grading. The fluoroscopic procedure is still a promising alternative, given the chance of a higher number of subjects to be studied.

PHC.R.005.07

Outcome of Non-invasive Positive Pressure Ventilation Among Patients with Acute Respiratory Failure After a Cardiovascular Surgery

Lemuel A. Umahag, MD; Aileen Guzman-Banzon, MD

Post-surgical patients who develop acute respiratory failure after successfully weaned and extubated require prompt ventilatory support. Rapid reinstitution of ventilatory management and control of airway among this patient

may prevent the development or reduce the severity of complications. The act of reintubation however, is not without complications especially among post-cardiovascular surgery patients. To examine the impact of NIPPV among this group on hospital outcome, we performed an analysis of prospectively gathered data in a tertiary recovery room and surgical ICU. We randomly assigned 9 subjects during the 4 months period. Five patients were assigned to the NIPPV group and four patients were assigned to the reintubation group. Both groups were matched for age, sex, presence of co-morbid conditions, indications for mechanical ventilation and Acute Physiologic and Chronic Health Evaluation II Score. The type of surgery, length of surgery and the complications after try into the study were not statistically significant. In-hospital mortality was almost similar in both groups (NIV=20% versus RI=25%, p-value of 1.0). For the timing of death, sole mortality occurred after reintubation for failed NIPPV in the NIPPV group (20%) and also one mortality occurred while patient was intubated for the RI group (25%). The reintubation rate for failed NIPPV was 20% (l out of 5 subjects). Patients who recieved NIPV and RI have comparable duration of ventilator support (8.2±3.2 days versus 9±3.6 days, p-value = 0.8). The number of ICU days for NIPPV (10±3.16 days) and reintubation (10.25±5.25 days) were not statistically significant (p-value of 0.92). The number of hospital days were also comparable for both NIPPV and RI (22.2±11.60 days and 23.75±-11.6 days, p-value of 0.8). This study indicated that the use of NIPPV in the management if acute respiratory failure after a cardiovascular surgery have comparable outcomes with reintubation and this affirms the varied applications of NIPPV as another option in the management of these subsets of patients.

PHC.R.009.07

The Contribution of Transthoracic Needle Biopsy in the Diagnosis and Evaluation of Mediastinal Masses.

Rochie L. Hojilla, MD; Ramon Ribu, MD; Juvenal Quitiquit, MD

Transthoracic Needle Biopsy of Mediastinal Masses was carried out in 45 patients from June 2006 to January 2007 and the technique yielded a relatively good percentage of accurate diagnosis although comparatively 1 were than the results done in centers abroad. This procedure was well tolerated by the patients with the least complications encountered. A 78% accuracy in the diagnosis of benign lesions of the mediastinum was achieved, especially thymoma. However, the cytologic diagnosis of malignant tumors was less impressive.

PHC.R.010.07

Spirometric Changes In Patient With Rheumatic Heart Disease Before and After Mitral Valve Surgery at the Philippine Heart Center: a Prospective Cohort Study

Jerome R. Santos, MD; Maria Paz B. Mateo, MD

Background: Evaluation of pulmonary function in adult patients undergoing cardiothoracic surgery is a simple test to assess pulmonary reserve that has important implication in perioperative and post-operative morbidity. This study evaluates the spirometric changes in adult patients with rheumatic heart disease before and after mitral valve surgery at the Philippine Heart Center. **Methods:** Twenty five patients with rheumatic heart disease, with predominant mitral valve lesions were divided into four groups, based on New York Heart Association (NYHA) class. They were evaluated for changes in pulmonary functions preoperatively, one month and three months after surgery to evaluate improvements of lung function after mitral valve surgery. **Results:** Lung function was found to be impaired in all twenty five patients and all suffered from restrictive lung disease. Forced vital capacity (FVC), forced expiratory volume in 1 second (FEV1), peak expiratory flow rate (FEF 25-75%), maximum voluntary ventilation (MVV), forced expiratory volume in 6 second (FEV6), total lung capacity (TLC), diffusion capacity of carbon monoxide (DLCO) were universally found to be decreased preoperatively while residual volume (RV), airway resistance (sRAW) were significantly increase. The pulmonary function FVC, FEV1, MVV and FEF 25-75% slightly improved one month after surgery but was not statistically significant. Lung Volumes, TLC, RV, DLCO and sRAW improved dramatically one month after surgery and is

statistically significant. There was an overall improvement in all the spirometric, lung volume and DLCO parameters three months after surgery although the values remained still lower than predicted. After mitral valve surgery, the mitral valve area significantly improved from a MVA cm2 of 1.14 ± 0.23 to 2.36 ± 0.5 with a p value of 0.000. The mean pulmonary artery pressure was elevated prior to surgery with a mean PAP mmHg of 53.44 ± 17.59 measured by TRJ and a significant improvement after surgery to a mean PAP mmHg of 26.12 ± 8.37 with a p value of 0.000. **Conclusion:** Pulmonary function is impaired in all patients with rheumatic heart disease and deteriorates immediately after surgery but data showed that pulmonary function minimally improve one month after surgery as shown by slight improvement of FVC, FEVl, MVV and FEF 25-75% while lung volumes, TLC, RV, DLCO and sRAW significantly improves immediately after surgery which were statistically significant. There was an overall improvement in all the spirometric parameters three months after surgery although the values remained still lower than predicted. Spirometry can evaluate respiratory reserve in cardiopulmonary patients who will undergo surgery and is simple and reproducible. The use of other parameters such as the lung volumes, TLC, RV, DLCO and sRAW were found to be more sensitive in predicting perioperative and post-operative morbidity. We therefore recommend it to be included in the routine evaluation of pulmonary function prior to surgery.

PHC.R.011.07a

Mallampati Score as an Independent Predictor of Obstructive Sleep Apnea

Teresita Celestina Santiago-Fuentes, MD; Aileen V. Guzman-Banzon, MD

Objectives: To determine whether differences in sleep apnea severity between men and women referred to the Philippine Heart Center Sleep Clinic for polysomnography are related to the differences in Mallampati scoring during physical examination. **Methods:** A prospective multivariate analysis assessment of a predictor variable in patients referred to Philippine Heart Center Sleep Clinic for polysomnography from July 2007 to December 2007.

PHC.R.011.07b

The Association of Urinary Albumin Excretion In Obstructive Sleep Apnea

Teresita Celestina Santiago-Fuentes, MD; Aileen V. Guzman-Banzon, MD; Encarnita Blanco-Limpin, MD

Background: OSA's is recently recognized as a risk factor for cardiovascular disorders and metabolic syndromes. These syndromes reflect a persistent inciting injury leading to microvascular endothelial dysfunction and one surrogate marker used clinically is urinary albumin excretion. This study evaluates the association of urinary albumin excretion among patients with OSA. **Methods:** Twenty adults, representing a spectrum of OSA severity, underwent overnight polysomnography and urine colletion. OSA severity was assessed using the apneahypopnea index (AHI). The primary outcome measure was the protein-creatinine ratio (PCR). Spearman rank correlations and Chi-square test were used to provide an assessment of the relationship between AHI and PCR. **Results:** The sample consisted of 20 subjects with a mean age of 50.75 (16.74 SD) years and majority were males (80%) and obese (50%). The percentages of subjects with mild (AHI 5-14), moderate (AHI 15-29), and severe (AHI ≥ 30) were 5%, 25%, 60%, respectively. Results showed that subjects with an AHI of at least 30 did not have any significantly higher mean PCR level than subjects with an AHI less than 30. Using the Chi-square test a p value of 0.276 was calculated which was not statistically significant. Likewise, the association of AHI and PCR were not statistically significant (Rs 0.088 p va1ue 0.708). **Conclusion:** Our preliminary results demonstrate that the presence of Obstructive Sleep Apnea is not associated with increased urinary albumin excretion. Additional studies with larger population should provide insight into the presence of glomerular endothelial injury in subjects with OSA.

PHC.R.014.07

Comparative Evaluation of One-day Surgery vs. 3-day Admission for PDA Closure at Philippine Heart Center

Helen Grace B. Aragones, MD; Jaime Nuevo, MD; Ma. Lourdes Casas, MD; Ma. Bernadette Azcueta, MD

Objective: To compare the immediate outcome and complications of PDA one-day surgery and 3-day admission of children for PDA surgery at Philippine Heart Center. **Methods:** Patients aged 3 to 18 years old seen at the Outpatient Department of the Philippine Heart Center diagnosed to have patent ductus arteriosus confirmed by 2DEcho with no associated anomalies with normal pulmonary artery pressure are randomly grouped into: Group A (same day surgery)- patients admitted on the day of the surgery and discharged 24 hours after the procedure and Group B (3-day admission) - patients admitted 1-2 days prior to the scheduled surgery for preoperative evaluation and discharged 24-48 hours after the procedure. All subjects underwent PDA ligation. Post-operatively, patients were monitored closely and given anti-hypertensives and pain relievers as necessary. Follow-up of patients are done at the OPD 5 days after discharge. **Results:** There were 56 participants in the study. There were 30 patients in the same-day surgery group with mean age of 8.5 $\pm$ 4.59 years and PDA size of 0.627 $\pm$ 0.22cm while 26 were assigned to the 3-day admission group with mean age of 7.31 + 3.57 years and PDA size of 0.848 + 0.35 cm. Complications noted include PDA leak (Group A n=2), pleural effusion (Group B n=l) and the most frequent complication was pneumothorax (Group A n= 5; Group B n=3). Overall complication rate was at 23%. There were no mortalities in both groups and no patient required blood transfusion. **Conclusion:** Open surgical ligation is a safe and effective method to close a patent ductus arteriosus in children with minimal complications. Same-day surgery is comparable to 3-day admission for surgical closure with regard to safety and it has the advantage of cost-effectiveness with proper screening and clearances of patients at the OPD.

PHC.R.017.07

Validity of Nitrite and Leukocyte Esterase Tests for the laboratory Detection of Urinary Tract Infection in a Random Population at the Philippine Heart Center: a Prospective Study from October 2005 to September 2006

Mary Jane B. Carias, MD; Marissa A. Orillaza, MD; Frederick L. Llanera, MD

Background: Urinary Tract Infection (UTI) requires costly uroculture to confirm the diagnosis. Dipstick test as part of urinalysis is used widely to screen for UTI. Nitrite test (NT) and leukocyte esterase (LE) test included in the Dipstick indirectly detect UTI. Various studies on the diagnostic value of these two tests were done on different settings and different populations, but with conflicting results. The objective of this study is to compare NT and LE test and the combination of both using uroculture as reference standard in the laboratory detection of UTI in our own setting. **Design:** Urine specimens from the Philippine Heart Center general patient population with requests for urinalysis and uroculture are included in this prospective study. One portion of each specimen is plated on Blood Agar Plate and MacConkey Agar and the other portion is subjected to urinalysis in which Dipstick (Roche Combur test ID ux. Roche Mi ditron M) NT and LE test are included. The uroculture is followed up after 48 hours. The NT, LE results and the combination of both are compared to the culture results. **Results:** Of the three hundred twenty four (324) specimens, 100 (30.86%) have significant growth in uroculture. The most frequent isolate is *Escherichia coli.* The LE lest shows 77% sensitivity, 47.3% specificity, Positive Predictive Value (PPV) of 39.5% , and Negative predictive Value (NPV) of 82.2%. It has a poor agreement with culture result (Kappa coefficient 0.1926). The NT shows 21.8% sensitivity, 97.3% specificity, 78.6% PPY, and 73.3% NPV. It has a poor agreement with culture result (Kappa coefficient 0.2370). Combined NT-LE test shows 46.3% sensitivity, 94.5% specificity, 76% PPV, and 82.5% NPV. It has a better agreement with culture result (Kappa coefficient 0.4659) com pared with either test done alone. **Conclusion:** The LE test has very low measures of association and poor agreement with culture results to be used alone as a screening test for UTI. The NT has a slightly better agreement with culture result compared with the LE test. The combined LE-NT tests has better agreement with culture result compared with either LE or NT alone. Both NT alone and combined LE-NT have high specificity hence either NT alone or combined LE-NT is useful when one is ruling out UTI. Depending on a patient's clinical presentation, a urine specimen with a negative NT or a combined

negative LE-NT can be reasonably excluded from costly urine culture.

PHC.R.018.07

Effects of Asthma Education Program Among Asthmatic Children and Adolescents

Amelita Marla A. Hamoy, MD; Ma. Nerissa Atienza - De Leon, MD

Objectives: To determine if an educational intervention will have an effect on the skills, attitudes and perception of the patient regarding their disease. **Methods:** A total of 88 known asthmatic children and adolescent were recruited from private clinics and outpatient department of Philippine Heart Center. An asthma pediatric education lecture was given and for 3 consecutive months subjects were followed up with spirometry, symptom checklist and for their daily diary was done. Objective variables noted were school absenteeism, use of antibiotics, frequency of asthma attacks, frequency of emergency room visits, number of hospital admissions and physician visits. A Mann-Whitney Test was used to compare baseline non-qualitative characteristics data. Comparison of qualitative data, an independent t-test was used with p=0.005 considered a significant. **Results:** The educational program resulted in less use of antibiotics and less frequent visits to a doctor but the effect lasted only for one month. A decreasing trend was noted among other vari ables but was not statistically significant. **Conclusion:** The asthma education decreases the use of antibiotics and lessen visits to a physician but only for a month among patients with moderate persistent asthma.

PHC.R.019.07

Validation of a 30 Item Questionnaire on Asthma Knowledge, Attitudes and Practices Among Parents of Children with Asthma for the Asthma Pediatric Education Program of the Philippine Heart Center (ASPEP)

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Asthma is a serious public health problem worldwide. A number of health related instruments have been used to categorized knowledge, attitudes and beliefs about asthma. The purpose of this study is to determine the reliability of a standard parental asthma questionnaire based on the Asthma Pediatric Education Program (ASPEP). Parents of asthmatic children were included in the study. The development process began by identifying relevant content areas based on the lectures on ASPEP. An expert panel assessed the content validity of the questionnaire. The subjects were asked to answer the questions. After the initial validation, a re-test was done after two weeks using the same subjects. The original questionnaire was reformatted in such away so as to avoid familiarity bias. A final list of 10 items for the knowledge domain, 10 items for the attitude domain and 10 items for the practices domain were included in the final research tool. The overall reliability was high in the knowledge domain (Cronbach's alpha = 0.79). The overall internal reliability in the attitude domain was high (Cronbach's alpha/= 0.91). In the practice domain, all subscale items were highly reliable and consistent (Cronbach's alpha = 0.92). The overall internal reliability of the questionnaire was high (Cronbach's alpha = 0.89). The questionnaire that we developed in this study is a reliable and useful tool to measure the knowledge, attitudes and practices of parents of asthmatic children.

PHC.R.026.07

Framingham Risk Scoring System as Predictor of Significant Coronary Artery Disease in Patient with Rheumatic Heart Disease

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Objective: To determine the usefulness of Framingham's risk scoring for CAD in the diagnosis of Coronary artery disease among patients with Rheumatic Heart disease. **Methods and Result:** There were 77 patients aged 40 and above that were included in the study. All of these patients are diagnosed to have rheumatic heart disease and will underwent coronary angiogram. Interviews and review of laboratory results were done. Framingham risk scoring was then use for each patient which was then correlated with their coronary angiogram results. The Framingham risk scoring showed a sensitivity of 76.5% and a specificity of 86.7% (95% Cl) in

diagnosing coronary artery disease. It gained a high negative predictive value if 92.9% and a relatively low positive predictive value of 61.9%. The prevalence of coronary artery disease among the population with rheumatic heart disease is 22%. **Conclusion:** The Framingham risk scoring can be use as an initial diagnostic tool in diagnosing coronary artery disease with high specificity and a high negative predictive value. Patients with Framingham risk score of below 10 may not undergo coronary angiogram prior to valve surgery.

PHC.R.028.07

The Effect of Oral Trimetazidine on the Left Atrial Volume Index in Patients with Chronic Stable Angina: a randomized-controlled trial

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Background: Diastolic dysfunction, which can be reflected in the left atrial volume index (LAVI), is present in patients with chronic stable angina (CSA). One study demonstrated the effect of Trimetazidine, an anti-anginal drug with no significant hemodynamic effect, in the mitral E/A ratio of patients with angina. This study determined the effect of oral Trimetazidine 35 mg, administered BID for 6 months, on the LAVI of CSA patients. **Methods:** This is a prospective, randomized, double-blind study wherein adults with CSA, as diagnosed via TET or stress echocardiography and clinical symptoms, were randomized to receive either trimetazidine 35 mg BID or placebo for 6 months. The following 2DED parameters were measured at baseline and after 6 months of treatment: LAVI, mitral E/A, Isovolumic Relaxation Time (IVRT), Deceleration Time (DT) and Ejection Fraction (EF). **Result:** Forty patients were randomized, however only 36 completed the study and had a repeat 2DED done at 6 months. Patients treated with trimetazidine was observed to have a trend towards a decrease in LAVI (p 0.153), while the placebo group had a significant increase in LAVI (p 0.002). There is also a significant difference in the LAVI after 6 months between the two groups [3.0 ~ 8.15 vs -6.4 ~ 7.45, p 0.001). The trimetazidine group showed a trend towards an improvement in LVEF (p 0.075) while a trend towards a decrease in LVEF was seen in the placebo group (p 0.335). IVRT and DT showed improvement in the Trimetazidine group (p 0.526 and p 0.188) but not significantly, while prolongation was noted in the placebo group (p 0.370 an p 0.833). Mitral E/A ratio improved in both groups, but only statistically significant in the placebo group (p 0.000). **Conclusion:** The mean change in LAVI among CSA patients who received oral Trimetazidine for 6 months was significantly greater as compared to those who received placebo. Improvement in EF, IVRT, DT and mitral E/A ratio was also seen in this patients but these were not statistically significant.

PHC.R.030.07

Clinical Characteristics and Angiographic Features of Patients with Premature Coronary Artery Disease, a Multi-Center Study

Oliver V. Boiser, MD; Erwin Dizon, MD

Background: Coronary artery disease among Filipinos ≤45 years old is observed to be not uncommon. Clinical and angiographic characteristics may be similar from international reports. **Objectives:** The general objective of the study is to determine clinical and angio graphic features of patients ≤45 years old diagnosed to have coronary artery disease. Specific objectives include determination of demographic profile of patients, associated risk factors and angiographic features. **Methods:** All patients ≤45 years old subjected to coronary angiogram and meets the inclusion criteria are included in the study. Review of charts will be done to collect data on demographic profile of patients and recorded risk factors. Angiographic features will be determined by two readers.

PHC.R.031.07

Accuracy of CT Angiography as a Procedure for Preoperative measurements of Pulmonary Arteries Size in children with Tetralogy of Fallot

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Objective: To determine test characteristics of CT angiography, cardiac catheterization and

transthoracic echocardiography as procedures in measuring pulmonary arteries sizes and presence of collaterals in pediatric patients who will undergo surgical intervention. **Methods:** Patients included in the study underwent CT angiography of the heart using a maximum of 2ml/kg of dye. Prior to procedure, the patients were given hydrocortisone per intravenous route with a maximum of 10 mg/kg/dose. There was a 24 hour wash out period of dye between CT angiography and cardiac catheterization. During cardiac catheterization a maximum of 1.5 ml/kg of dye were given for angiography. Standard cranial and right anterior oblique views were taken to note bifurcation of MPA. Uniform or standard measurements (in cm) of pulmonary arteries and descending aorta as to the location were done. **Results:** There were five patients enrolled in the study. The age ranges from 5-17 years old. There was a slight female preponderance with a 3:2 ratio. Different variables of different diagnostic modalities such as measurements of main pulmonary artery, left pulmonary artery, right pulmonary artery and descending aorta were compared against surgery using Pearsons Coefficient of Correlation. This study needs further increase in number of sample size in order to detect any differences in measurements of pulmonary artery sizes and descending aorta in correlation with TTE and cardiac catheterization against the gold standard which is surgery. **Conclusion:** It needs further increase in number of sample size in order to detect any differences in measurements of pulmonary artery sizes and descending aorta in correlation with TTE and cardiac catheterization against the gold standard which is surgery.

PHC.R.032.07

C Reactive Protein: Predictor of 6 Months outcome in Patients with Acute Myocardial Infarction Undergoing Primary Coronary Intervention at the Philippine Heart Center

Arlyn P. Miranda, MD; Alexander Ang, MD

Background: Determination of CRP concentration has been viewed as a possible method of further refining risk stratification in patients with acute myocardial infarction Earlier work suggested a prognostic association between increase CRP production and outcome after myocardial infarction It has been recognized as a strong independent predictor of short term and long term mortality after acute coronary syndrome. Studies have shown that CRP is strongly associated with short term major adverse cardiac event in patients with acute myocardial infarction treated with primary PCI. However, limited studies have been conducted correlating CRP levels with outcomes after PCI. **Objective:** Assuming that the CRP level is a marker for the intensity of post infarction outcomes. This study will be done with the intent of demonstrating the importance of CRP level in predicting the outcome after 6 months in patients with acute myocardial infarction who undergo PCI. **Methods:** This is a prospective cohort study in 65 patients admitted with Acute Myocardial Infarction who underwent primary PCI between January, 2008 to February 2009 at the Philippine Heart Center blood samples for CRP was obtained before coronary angiography Records of patients after PCI were reviewed and an interview carried out through phone or personally were done after one month, 3 and 6 months post PCI to determine the patient's outcome. Data was expressed as mean $\pm$ SD Statistical analysis was done using the Chi-square test for categorical variables, *T*-test for continuous variables and Mann Whitney U Test for ordinal variable statistical significance was established at $p < 005$ The Kaplan Meier method was used for cumulative survival analysis. **Result:** Between January, 2008 and February, 2009, we prospectively investigated and recruited 65 patients (38 were admitted as service and 27 as private) between ages of 25 to more than 80 years old who presented with Acute Myocardial lnfarction and underwent PCI in the Philippine Heart Center. Most of the patients are above 50 years old with a mean age of 56 and male (81%) Hypertension (61%) is the most prevalent among the risk factors. The mean CRP level before the procedure was J7.87mg/dl. The 6 months Major Adverse Cardiovascular Events (MACE) occurred in 2+.6% of the patients, 13 8% developed the primary event 6 patients was readmitted because of Unstable Angina and 3 of the patients had non-cardiac causes as the reason for admission 11% had a secondary events with Cardiac Dysrhythmia as the cause of death. CRP levels was higher in patients who developed MACE, however was not statistically significant

(Unstable angina p value 0.937, all cause mortality p-value 0065). Event free survival for the primary event was 87.9% after 3 months and 84.5% after the 5 month, while for the first and second month, 98.3% and 96.55%. Event free survival for the secondary events was 92% after one month and 89% after 2 months post PCI. Majority of patients died on the first month. **Conclusion:** In conclusion, high CRP is not associated with MACE 6 months post PCI CRP cannot be viewed as an important biomarker in daily clinical practice and cannot predict an accurate risk stratification for individuals at risk for MACE post PCl. There is no prognostic significance of elevated CRP beyond that defined by traditional risk predictions after AMI.

PHC.R.033.07

Accuracy of Spiral Computed tomographic Angiography in the Evaluation of Aortic Dissection among Patients with Aortic Disease: a prospective Study

Arlene D. Geozon, MD; Alfredo F. Villarosa, MD

Background: Aortic dissection is the most common acute illness of the aorta. It is a life-threatening medical condition associated with high rates of mortality and morbidity. Traditionally, aortography is used to evaluate the presence of this disease entity. However, computed tomographic angiography is now preferred because of its being less invasive and ability to detect associated findings that could lead to the diagnosis of aortic dissection. **Objective:** The purpose of this study is to determine the accuracy of spiral computed tomography in the diagnosis of aortic dissection in patients with aortic disease. **Methods:** This is a validation study of patients who were referred to the CT/ MRI section of the Philippine Heart Center for the evaluation of aortic disease. Population includes all patients who underwent CTA and subsequent aneurysmal repair. CTA were reviewed to evaluate the following: site and extent of aortic dissection, size of aortic aneurysm, aortic wall calcification, presence of luminal thrombus, and aortic branch involvement in relation to aortic dissection. The efficacy of CTA was determined using surgery/ histopath or angiography as gold standard. **Results and Conclusion:** In this study, the predominant CTA finding is the presence of aneurysm followed by the presence of intimal calcification and thrombus formation. Most of these aneurysms are fusiform type and are commonly seen in the infrarenal segment. Among the 64 patients, dissection was correctly diagnosed by CTA in 18 patients, with 1 false positive finding. The most commonly encountered type of dissection is DeBakey. Aortic branch extension of dissection (n=3) and presence of hemopericardium (n=4) were seen. With high sensitivity of 100%, specificity of 97.8%, positive predictive value of 94.7, and negative predictive value of 100%, CTA, therefore, is a useful primary and maybe the only imaging modality needed in the evaluation of aortic dissection.

PHC.R.034.07

Comparison of the Two Scoring Indice and Determination of their Utility in Predicting the Severity of Community Acquired Pneumonia Among Patients Both Admitted and Treated as an Out-Patient

Mitzi Y. Banate, MD; Aileen Guzman-Banzon, MD

The objective of this study is to determine the utility of CURB65 and PSI scoring in predicting the severity of community acquired pneumonia. Pneumonia poses a great threat in the society. In the Philippines, community acquired pneumonia rank as the 3rd and 4th leading cause of mortality and morbidity among admitted patients. Several investigators made a landmark 1001 in assessing the severity of pneumonia and prognosticating the possible outcome. Two identified internationally standard tool are now being used to evaluate community acquired pneumonia CAP); the Pneumonia Severity Index (PSI) and CURB 65 [confusion, urea >7mmol/L, respiratory rate >30/min, low blood pressure(<90/60mmHg) and age >65yrs]. A total of 97 adult patients (male-41 and female-56) with a diagnosis of community acquired pneumonia seen in the emergency department in a 302-bed teaching hospital were evaluated basing on the CURB65 and PSI score. Of the ninety seven patients that were admitted, 31 of whom (31.9%) required ICU admission. The mean age is 73 ± 16.429 (SD). This is a prospective cohort study. Both CURB65 and PSI showed significant results in predicting the outcome of CAP with a p value

of 0.000. However, CURB65 found to have a better discriminatory result compared to PSI. A score of 23 for CURB65 and 5 for PSI are the most sensitive cut off value with a kappa coefficient of 0.56 ± 0.09 (p value-0.000) and 0.50 ±0.09 (p value-0.00), respectively. In this study, we found that CURB65 showed the slightly better sensitivity and specificity (91.7% and 85.9%) in predicting the severity CAP as 1compared to PSI (100% and 47.1%). In conclusion, CURB 65 has slightly better discriminating power in predicting 30-day mortality as compared to PSI.

PHC.R.035.07

Determinination of the utility of the SPO_2/ FIO_2 Ratio in the Diagnosis of Patients Admitted at the Philippine Heart Center with Acute Lung Injury or Acute Respiratory Distress Syndrome: a Cross Sectional Study

Marie Grace P. Malicdem, MD; Aileen Guzman-Banzon, MD

The diagnostic criteria for Acute Lung Injury and Acute Respiratory Distress Syndrome utilizes the arterial oxygen saturation (P02) over the fraction of inspired oxygen (Fi02) as measured by arterial blood gas analysis to measure the degree of hypoxemia. This study aims to determine the utility of pulse oximetric saturation (Sa02) over fraction of inspired oxygen (Fi02) as a substitute for the diagnosis of Acute Lung Injury and Acute Respiratory Distress Syndrome. Patients admitted at the Philippine Heart Center who were diagnosed with Acute Lung Injury and Acute Respiratory Distress Syndrome were included in the study. SIF values corresponding to PIF ratios of 200 (ARDS) and 300 (ALI) were determined. Comparison of proportions and means were done using the Fischer's exact test a and student *T*-test, respectively. There were 36 subjects included in the study. For the comparison of proportions, at the 95% level of confidence, the sensitivity value of S/F test for ARDS consistent with observed data falls at 91.7%. The specificity value of SIF test for ARDS falls at 83.3%. The positive predictive value of SIF test for ARDS falls at 91.7%. The negative predictive value of SIF test for ARDS falls at 83.3%. At 95% confidence interval the sensitivity values of SIF test, for ALl consistent with observed data was 100%. The specificity value of SIF test for ALI was 7.7%. The positive predictive value of SIF test for ALI falls at 73.9%. The negative predictive value of SIF test for ALI falls at 100%. Although, there was a limited number of subjects, this study showed a trend toward the utility of SIF ratio as a substitute for PIF ratio for the diagnosis of Acute Lung Injury and Acute Respiratory Distress Syndrome.

PHC.R.036.07

Long Term Physiological Outcome of Obstructive Sleep Apnea

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Background: Obstructive Sleep Apnea Syndrome (OSA's) has been associated with cardio and cerebrovascular related morbidity and mortality in observational and epidemiological studies and its long term impact on physiologic outcome remains unclear. **Objectives:** To determine the long term effect of Obstructive Sleep Apnea. **Study Design:** Observational Prospective Cohort **Setting:** Sleep Section of Philippine Heart Center **Methods:** All patients who underwent sleep study are included. **Data Analysis:** Descriptive statistics, *T*-test and multivariate logistic regression are used to analyzed the data.

PHC.R.037.07

Comparison of Shapiro Risk Index with Cardiopulmonary Risk Index in Predicting Post operative Pulmonary Complications After Cardiac Surgery

Erma D. Garcia-Lazaro, MD; Rommel D. Bayot, MD; Ma. Paz B. Mateo, MD

Postoperative pulmonary complications (PPCs) are an important part of the risk of surgery and prolong the hospital stay by an average of one to two weeks. It is defined as an abnormality that produces identifiable disease or dysfunction which is clinically significant and adversely affects the clinical course. This would include several major categories of clinically significant complications such as atelectasis, infection, including bronchitis and pneumonia, prolonged mechanical ventilation and respiratory failure, exacerbation of underlying chronic lung

disease, and bronchospasm. Preoperative risk scores are useful for risk assessment, where we can identify preoperatively patients who are at risk for developing PPCs. Shapiro risk index and Cardiopulmonary risk index (CPRI) are only two of the scoring systems which are used in predicting PPCs. In this study we compared the two indexes in predicting PPCs among patients who underwent elective cardiac surgery at Philippine Heart Center from January to December 2008. To compare the usefulness of Shapiro risk index and CPRI in predicting PPCs, we performed a cohort study of prospectively gathered data of 76 patients who underwent elective cardiac surgery up to the time of discharge in a one-year period. The risk for the development of PPCs were analyzed by getting the composite outcome (n=54). Analysis showed that smoking is the only patient-related risk factor that significantly contributed to the development of PPCs after cardiac surgery (p value = 0.027). Occurrence of PPCs based on Shapiro Risk Score and Shapiro Risk Classification were analyzed and showed non-correlation (p value of 0.058 and 0.71 respectively). In contrast, occurrence of PPCs based on CPRI score showed significant correlation with the composite outcome (p value = 0.000). The ability of the two indexes to predict the timing of extubation were also analyzed using the spearman correlation coefficients and it showed significant correlation with CPRI score (p value = 0.000; Rho = 0.514). However, Shapiro risk score and classification showed non-correlation (p value = 0.571; Rho = 0.066 and p value = 0.424; Rho = 0.093 respectively) This study showed that CPRI score is useful in predict ing PPCs and timing of extubation after cardiac surgery. In contrast, Shapiro risk index does not predict its outcome. It is also noted that smoking is the only potential patient-related risk factor that may predict PPCs after cardiac surgery.

PHC.R.038.07

Clinical factors Affecting the Outcome in Post Radioactive Iodine (RAI) Therapy Patients

Alvin Quinon, MD; Eulogio Bel, Jr. MD; Cecile Jimeno MD

Objective: To evaluate the clinical factors affecting the outcome of RAI therapy. **Method:** Patients (11=41) with Graves' disease treated with anti-thyroid drugs were followed up after Radioactive Iodine therapy treatment. Thyroid scan, 2 and 24 hours radioactive iodine uptake were taken to compute for the therapy dose (12 uci) (computed thyroid weight in gms)/ (24-hour [131 uptake). Patients were then then divided into groups (Group I= hypothyroid, Group 2= euthyroid, Group 3 hyperthyroid) based on their thyroid function results (FT3, FT4, TSH: after 2, 4, 6, 12 months post-therapy. Clinical and physiologic factors were then correlated with the outcome. **Results:** The population consisted of 41 patients (male=8, female=33) with an overall incidence of Group 1= 17%, Group 2= 54% and Group 3= 29% post-therapy. Factors such as age, with their means (Groups 1= 34, 2= 3'1, 3=39 p= OA2) and gland uptake (24-hour Groups 1= 53,2= 61 3= 58, p= OA1) were not associated with the remission rate. Other factors that were related to the length of the disease such as duration of symptoms (Groups 1= 21, 2=24, 3= 29 months p= 0.68), duration of medicine prior to RAI therapy (Group 1= 10, 2= 15, 3= 18 months p=0.3(6) and gland weight (Groups 1=40 2=42 3=46 grams p=0.78) tends to have a higher mean values in therapy failure patients. **Conclusion:** Clinical factors studied showed no significant differences among patients developing hypothyroid, euthyroid or hyperthyroid state. The data suggested that treatment failures in patients with Graves' disease could be improved by lessening the time interval between the diagnosis and radioactive iodine therapy.

PHC.R.041.07

Evaluation of Congenital Heart Disease by Cardiac Computed Tomography at the Philippine Heart Center: a retrospective study

Arlene D. Geonzon, MD; Marvin T. Tamaña, MD

Background: Improvements in the diagnosis of congenital heart disease during infancy have resulted in outstanding increase in the prevalence of this condition. Management, may it be surgical or medical, has been given appropriately. Aside from clinical assessment, imaging techniques contributed much from this medical phenomenon. Echocardiography, cardiac cathe-

terization, cardiac computed tomography and magnetic resonance angiography at the most popular of these techniques. Although most information from these modalities is redundant, they also are frequently complementary. **Objectives:** to assess the diagnostic accuracy of a 40 -slice computed tomography in the evaluation of pediatric patients with congenital heart disease at the Philippine Heart Center. **Methods:** This is a retrospective cross-sectional study of pediatric patients who underwent cardiac CT at the Philippine Heart Center from October 2005 up to present. A 40-slice Philips Brillance Computed Tomographic Scanner was used and followed a standard cardiac CT protocol. Cardiac CT findings will be compared with echocardiograpic findings. Operative report will be retrieved from the medical record and will be used as the gold standard. **Data Analysis:** Demographic characteristics together with clinical diagnosis will be summarized. The mean + SD for the age, gender and weight distribution will be computed. Chi-square test will be used to determine the association of different CT features of complex congenital heart defects. To determine the diagnostic accuracy of cardiac CTA, final diagnoses will be compared to surgical findings. Test parameters (sensitivity, specificity, positive and negative predictive value) will then be calculated.

PHC.R.042.07

The Comparative Effects of Statins on Total Cholesterol, Triglycerides, LDL, and HDL Level Among Patients with Dyslipidemia at the Phi,ippine Heart Center

Maria Rowena A. Don, MD; Marcelito Durante, MD

Background: With the advent of cardiovascular diseases and modern advancement in therapy, clinicians are currently re-discovering the importance of preventive medicine. Perhaps one of the most studied worldwide is the effect of statins in the over-all morbidity and mortality of dyslipidemic patients. However, little data is available locally, an more so, the comparative effects of different statins on each component of the lipid profile, especially high-density lipoprotein (HDL) have not been fully analyzed. **Methods:** A cohort of patients seen at the Hypertension Clinic (Preventive Medicine Department) and in selected private clinics of the Philippine Heart Center were selected for the study. The subjects were asymptomatic hypertensive patients with newly diagnosed dyslipidemia and were prescribed statins (Atorvastatin, Rosuvastatin, or Simvastatin). Their lipid profile was later checked within 3-6 months of therapy, and individual effect were compared. **Results:** A total of 277 subjects were included in the study, however only 233 were analyzed. 108 subjects were given Simvastatin while 79 subjects were given Atorvastatin. Only 46 patients were given Rosuvastatin. Total cholesterol decreased by 11.9% in the Atorvastatin group, 10.1% in the Simvastatin group, and 21.2% in the Rosuvastatin group. Triglycerides decreased by 24.9% in the Atorvastatin group and 23.5% in the Rosuvastatin group. Triglycerides increased by 1.7% in the Simvastatin group. HDL levels failed to increase in both Atorvastatin and Simvastatin groups, but increased by 0.06% in the Rosuvastatin group which was not statistically significant. LDL-cholesterol levels decreased by 22.1% in the Atorvastatin group, 22.7% in the Rosuvastatin group, and only 10% in the Simvastatin group. **Conclusion:** There is greatest reduction of total cholesterol levels among patients treated with Rosuvastatin as compared to patients given Atorvastatin and Simvastatin. Triglyceride levels were reduced to t e same extent in patients given Atorvastatin and Rosuvastatin, but increased in the Simvastatin group. Comparable changes in LDL levels were seen in the Atorvastatin and Rosuvastatin groups, with less improvement observed in the Simvastatin group. There was no significant change in DL levels among all groups.

PhC.R.043.07

Predicting Outcome of Catheter Balloon Valvuloplasty (CBV) in Patients with Rheumatic Mitral Stenosis Using the Modified Philippine Heart Center (PHC) Echocardiographic Scoring System for Rheumatic Mitral Stenosis

Hermogenes R. Saludes, MD; Joyce S. Jumangit, MD; Raul Jara, MD; Antonio Pascual, MD; Edwin Tucay MD

Objectives: This study aims to assess the applicability of the Philippine Heart Center Echocardiographic Scoring System (PHCESS) in

predicting the outcome of catheter balloon valvuloplasty (CBV) in patients with rheumatic mitral stenosis. Moreover, this paper aims to compare the ability of the PHCESS to predict the outcome of CBV when compared with the Wilkins and the Padial Scoring Systems. **Methods:** This is a prospective cohort study. Patients with rheumatic mitral stenosis admitted at the PHC for PTMC from April 2007 to December 2009 were be included in the study. Patients who had significant mitral regurgitation (greater than mild) or left atrial and appendage thrombus, significant aortic stenosis and regurgitation or congenital heart disease were excluded from the study. **Results:** A total of 78 patients were analyzed in the study. Twenty eight had high valve scores using the WESS, forty six using the PHCESS and twenty seven using the Padial scoring system. Eight high Wilkins score patients had failed PTMCs, twenty-four high PHCESS patients had unsuccessful PTMCs and ten of the twenty seven high Padial scores and suboptimal outcome. There was a direct correlation between the Wilkins and Padial and between the PHC and Padial but none between Wilkins and PHCESS The average score that predicted success was ≤8.0 using the PHCESS and 7 using the Padial scoring system. The Wilkins scoring system did not show cut-off values that predicted outcome. **Conclusion:** Based on the results of this study, the PHCESS is the single best scoring system for predicting outcome of CBV/PTMC.

PHC.R.045.07

The Incidence of Post-operative Cognitive Dysfunction Among Patients Undergoing Cardiovascular Surgery Under Cardiopulmonary Bypass: a preliminary report

Yvette T. Go, MD

Background: The occurrence of post-operative cognitive dysfunction is a distressing complication following surgery. An increasing incidence has been noted in advance age group, type of surgical procedures and type of anesthesia care rendered. Postoperative cognitive disorders are marked by deficits in cognition and memory. Although mental function typically reaches a nadir in the early postoperative period and recovers to preoperative levels in most patients by 1 week after surgery, a significant number of patients, especially those undergoing certain types of surgery or with coexisting medical diseases, pre-existing cognitive dysfunction, or advanced age, are at higher risk for postoperative cognitive disorders and may experience long-term post-operative cognitive disorders. **Methods:** Patients aged 18 years old and over scheduled for elective cardiovascular procedures under cardiopulmonary bypass was entered in the study. Mini-mental status examination translated and validated in Filipino was performed at entry into the study, usually the day prior to surgery during preoperative evaluation, prior to discharge from the recovery room, discharge from hospital or one week after surgery, whichever is the earliest and one month after the procedure. **Results:** Sixteen patients were included in the study. There were no incidence of post-operative cognitive dysfunction among patients who underwent cardiovascular surgery under cardiopulmonary bypass. There was no statistically significant difference among patients before surgery, a week after surgery and prior to discharge. **Conclusion:** Due to the inadequacy sample size, no conclusion can be made. It is therefore the recommendation of this study to increase the sample size.

PHC.R.046.07

The Strategies of Treatment in Patients of the Hypertension Clinic at the Philippine Heart Center

Kathleen F. Sabiniano, MD; Ronaldo Manuel, MD

Objectives: To determine the therapeutic effect of the different drugs used in the hypertensive clinic of the Philippine Heart Center; compare the efficacy of a mono-therapy antihypertensive agent and a fixed low dose combi nation therapy in lowering blood pressure of hypertensive patients at the hypertension clinic of the Philippine Heart Center; to determine the blood pressure lowering efficacy of a mono-therapy antihypertensive agent and a fixed low dose combination therapy in hypertensive patients with coronary artery disease, diabetes mellitus, renal insufficiency and previous cerebrovascular accidents at the hypertension clinic of the Philippine Heart Center **Methods:** Patients of the hypertensive clinic of the Philippine Heart Center from 20-75 years old with co-morbid conditions such as coronary heart

disease, diabetes mellitus, renal insufficiency, and previous cerebrovascular accident. Chart review will be done at the record section of the Philippine Heart Center. Patients from 2000-2007 of the hypertension clinic of the Philippine Heart Center will be included. Age, Gender, Body Mass Index Risk factors such as smoking history, alcohol beverage intake history, dyslipidemia, co-morbid conditions such as coronary artery disease, diabetes mellitus, renal insufficiency and previous cerebrovascular accident will be noted Baseline blood pressure will be taken. Comparison of hypertensive drug (monotherapy and a fixed low dose combination therapy) and its efficacy on lowering blood pressure on the subsequent visits (during the first and third month) of the patients will be noted. The data will be encoded and analyzed.

PHC.R. 047.07

The Utility of Lower Extremity Pulse Oximetry in the Detection of Peripheral Arterial Occlusive Disease Among Asymptomatic Patients At Risk Seen as Out-Patient at the Philippine Heart Center

Michelle J. Sinangote-Remerata, MD; Joel Paz, MD

Background: Lower extremity peripheral artery disease (PAD) is an important manifestation of systemic atherosclerosis and is associated with markedly increased rates of cardiovascular ischemic events and death. The ABI has long been established as a useful diagnostic tool in the detection of peripheral arterial disease. However, it is not without limitations, as a considerable number of patients with PAD are undetected; it is less useful for patients with non-compressible vessels and in patients with less severe stenosis. **Objectives:** To determine the utility of lower extremity pulse oximetry in the diagnosis of peripheral arterial disease. The study specifically aims to determine the validity of pulse oximetry alone or in combination with the ABI in detection of PAD. **Study Design:** This is a cross-sectional study involving patients seen as outpatient at the Philippine Heart Center, who were symptomatic but at risk, and are not previously diagnosed with PAD. **Methods:** The ankle brachial pressure index was obtained using a handheld Doppler device. ABI was considered abnormal if it were < 0.9. Upper and lower extremity pulse oximetry were done in well rested patients in the supine position with the lower extremities elevated by 12 inches. Pulse oximetry was considered abnormal when the lower extremity oxygen saturation was at least 2% less than the upper extremity oxygen saturation. All patients enrolled underwent arterial duplex studies to verify the presence of PAD. **Data Analysis:** Sensitivity, specificity, positive and negative predictive values for detecting PAD were obtained for lower extremity pulse oximetry with or without the ABI using the arterial duplex scan as a surrogate gold standard in detecting PAD. **Results:** There were 89 patients screened and recruited into the study at the time of this reporting. The meal age was 59.5years, with majority of patients being females. The most prevalent risk factors were hypertension and dyslipidemia. Of the 89 patients, 68 lower limbs of the 34 patients underwent arterial duplex scan so far. In this study, the sensitivity of ADS alone in determining presence of PAOD is 33.3%, with a specificity of 97.6%. PPV and NPV are at 33.3% and 97.6% respectively. Using a positive pulse oximetry as an added criteria on top of a positive ABI in determining presence of PAOD did not increase the validity parameters (sensitivity 33.3%, specificity: 98.9%, PPV: 33%, NPV: 97.6%. However, when a positive ABI or a positive pulse oximetry result were used as a criteria to determine presence of PAOD, the sensitivity increased to 66.7% without markedly affecting the specificity. (96.4%). PPV is 40% while NPV is 98.7%. **Conclusion:** Addition of pulse oximetry on top of arterial duplex scan increases the sensitivity of detection for PAOD without significantly decreasing the specificity of the screening procedure. Therefore, a positive result of the pulse oximetry is highly indicative of PAOD even when the ABI is normal or when the ABI cannot be used to detect PAOD. **Recommendation:** It is recommended that the study be continued to include a greater number of patients to improve results. Furthermore, a study to monitor the progression of those patients with mild to moderate arterial occlusive disease maybe undertaken to determine the possible factors associated with disease progression.

PHC.R.048.07

Value of Coronary Calcium Scoring For Stroke Prediction Following Coronary Artery Bypass Grafting

Ma. Bridget Donato-Fernandez, MD; Liberty Yaneza, MD; May Donato-Tan, MD

Background: Stroke incidence in post CABG patient has an incidence of 1-5% and accounts for 21% of the post-operative mortality. Different risk factors responsible for the occurrence has been determined with different studies. A strong point among the studies was the presence of an atherosclerotic aorta as a strong predictor of post CABG stroke. This study would like to determine a non-invasive method to document the correlation between calcium score and risk for stroke in patient undergoing CABG. The need for a screening tool to determine those patients who have the risks for post-operative neurological complications could help the clinicians formulate the next best options for these patients, the kind of surgery that would be used whether off pump or not. **Method:** This is a cohort study where patients, aged 19 and above, admitted for CABG between June 2008 and December 2009 were included in the study and underwent plain cardiac CT scan for determination of calcium scores. Coronary calcification was calculated using the method previously described by Agatston, et. al. Patient were followed up during and after undergoing coronary artery bypass grafting to determine any stroke or neurologic changes. Those presenting with signs of stroke were confirmed using cranial CT scan. **Results:** The baseline characteristics of patient undergoing coronary artery bypass graft showed that majority are male at 81.6% of the cases and 18.4 % are female. The age group in which majority of these patients belong to is at the range of 41-69 years. Hypertension and Diabetes Mellitus are the most common co-morbidity noted among these patients. The calcium score at the range of >400 had the most number of patients (34). Stroke occurred in 7 of the 71 patients in which 5 (71.4%) of these had a calcium score >400 with a p value of 0.352. The sensitivity and specificity showed 71.4% and 47.0% respectively. The positive predictive value is 12.5% while negative predictive value is 93.9%. The relationship of stroke occurrence and chest x-ray finding of calcification showed a significant difference with a p value of 0.028. Sensitivity was 85.7% with a specificity of 57.6%. The positive predictive value is 17.6% while NPV is 97.4%. **Conclusion:** The atherosclerotic and calcific load in patients undergoing CABG does not translate to their stroke events. Coronary calcification adds little to our ability to predict risk. The quest for a non-invasive procedure to determine calcifications and occurrence of stroke may lie in the use of the simple chest x-ray because in this study, the p value was significant (p=0.028). Chest x-ray even showed a higher PPV and NPV over the calcium score in predicting outcome of stroke.

PHC.R.050.07

Clinical Profile of Hypertensive Patients Who are Taking Angiotensin Converting Enzyme Inhibitors or ARBs and had Developed CAD: a Retrospective Study

Danilo Santos, MD; Marcelito Durante, MD

Background: Hypertension is a risk factor for the development of heart failure (HF), both because hypertension leads to the development of left ventricular hypertrophy, and because hypertension is a risk factor for the development of coronary heart disease. The relative risk of HF among patients with hypertension, compared to that of the general population, was observed to be increased by several studies abroad. Angiotensin converting enzyme (ACE) inhibitors are commonly used in the treatment of hypertension. It is highly likely that the indications for and efficacy of ARBs are not different from those with ACE inhibitors. An ARB is particularly indicated in patients who do not tolerate ACE inhibitors (mostly because of cough). **Objectives:** To determine the clinical profile of hypertensive patients who are taking ACE Inhibitors or ARB and had developed CAD. **Methods:** This will be a one (1) year study of all patients from January 01, 2006 to December 31, 2006. All hypertensive patients 18 years old and above both sexes will be included in this study. Co-morbidities such as diabetes, kidney diseases and cardiac arrhythmia will be taken into consideration. **Data Analysis:** The administration rates of ACE and ARB will be recorded on admission at the Hypertension Clinic and will be express in frequency and percent distribution.

PHC.R.051.07

Pharmacologic Therapy for Peripheral Arterial Disease: The Philippine Heart Center Experience

Norberto Tuanio Jr., MD; Joel Paz, MD

Background: Proper medical management in PAD, even in patients with advanced disease requiring invasive intervention, has been proven to improve outcome, prolong the success of the intervention, improve functional capacity, and prolong life. However, patients with peripheral vascular disease received less optimal medical management than patients with coronary artery disease. Health care professionals should be instrumental in assuring that the peripheral vascular patient receives medical therapy of the same standard as the patient with coronary disease. No local data has yet been published to document the treatment practices of our health-care professionals when dealing with PAD. **Objectives:** To ascertain the treatment practices of our health care practitioners when dealing with peripheral arterial disease. **Methods:** Review of available charts will be done. All patients 19 years of age and above admitted at the Philippine Heart Center because of PAD will be included in the study. All patients who met the inclusion criteria but whose medical records are missing shall be excluded in the study. **Data Analysis:** PAD drug administration rates shall be recorded on admission and on discharge which will be expressed in terms of frequency and percent distribution.

PHC.R.058.07

Stroke after Coronary Artery Bypass Grafting (CABG): a Philippine Heart Center Experience

Catherine C. Tan, MD

Background: Coronary artery bypass graft surgery is one of the most commonly performed procedures. Advances in surgical techniques, anesthetic management, and postoperative care resulted in a steady decline in mortality, despite a gradual increase in the risk profile of patients. However, there has been little or no change in the incidence of postoperative stroke or neurologic dysfunction. **Objectives:** To describe the clinical profile of patients who develop stroke after undergoing CABG surgery; to identify risk factors for early and delayed stroke in patients who undergo CABG surgery; to determine the incidence of stroke after CABG surgery; to determine the impact of stroke after CABG surgery on the use of resources, as measured by the lengths of hospital stays and the need for intensive intermediate or long-term care. **Study Design:** Retrospective study of all patients with the diagnosis of stroke after CABG surgery at the Philippine Heart Center from June 2006 to June 2007. **Methods:** Medical records of the subjects will be reviewed. Perioperative demographic, clinical, and laboratory data will be collected. Risk factors for atherosclerosis will also be recorded. Development of any stroke and date it was noted will be recorded. Additional data (computed tomography findings, autopsy reports, and hospital-discharge summaries) will be reviewed, if necessary. The use of resources will be assesed on the basis of the length of stay in the intensive care unit and the total post-surgical stay in the hospital.

PHC.R.063.07

Flexible Fiberoptic Bronschoscopy (FOB) in the Evaluation and Management of Pediatric Patients: Clinical Experiences in a Referral Center for Cardiac Surgery

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Objective: To present the role of flexible fiberoptic bronchoscopy m the evaluation and management of pediatric patients. **Material and Methods:** The medical records of infants and children who underwent FOB at the Philippine Heart Center from January 1998 to June 2009 were reviewed. Information collected from the medical records included the following: demographic data, indications for FOB, imaging results, disease distribution, hemodynamic/ventilator status before the procedure, anatomic/structural/dynamic findings, any change in the management (conservative to surgical; change in antimicrobial treatment), change in clinical status or chest radiograph findings. The bronchoscopic reports of the patients which are filed at the Pediatric Pulmonology Office were likewise

reviewed. **Result:** A total of 57 FOB were performed in pediatric patients, between January 1998 and June 2009. These 57 procedures were done in 55 children, with a mean age of 6.85 years old (1 month to 18 years old). Out of the 57 total procedures, 20 were performed on children with cardiac disorders, 19 (53%) of which had congenital heart disorders. The indications for FOB in our center were for the evaluation of persistent atelectasis (28.11%), followed by evaluation of stridor (22.8%), and then for the evaluation of recurrent cough or pneumonia (17.5%). Among the airway pathologies found via FOB, airway dilatation (26.1%) and airway inflammation (24%) were the most common findings. These were followed by compression of the right main bronchus (13%) and airway obstruction (10.1%) **Conclusion:** The fiberoptic bronchoscope is a valuable tool for establishing diagnosis and plan of management in pediatric patients with airway disorders. Congenital heart diseases and pulmonary disorders require intensive evaluation and timely management, and we believe that FOB is at safe procedure that can be performed in children presenting with these conditions. Specialty centers should acquire the necessary skills, equipments and manpower to perform FOB on children with cardiac pulmonary disorders.

PHC.R.064.07

Effect of Ascorbic Acid on Dyslipidemia: A Study Among Philippine Heart Center Employees

Maria Nerissa S. Sunga, MD; Antonio Pascual, MD

Background: Hypercholesterolemia is one of the risk factors for coronary artery disease. Chronic dietary inadequacy of Vitamin C affects not only plasma cholesterol and triglyceride concentrations but also the integrity of the vascular wall. The tendency of low density lipoprotein [LDL] to oxidation is surmised to be a critical factor responsible for atherogenesis. There is substantial evidence for a role of dietary antioxidants in the prevention of atherogenesis which may be mediated through inhibition of the oxidative modification of LDL and the most effective way is to ensure maximal steady-state levels of ascorbate in the tissues. Triglycerides were also a strong independent risk factor for predicting coronary heart disease. Therefore, based on these facts, the purpose of this study is to investigate the effectiveness of Ascorbic acid supplementation on total cholesterol, LDL-C, HDL-C and triglycerides. **Methods:** An open non-comparative experimental study was done to 59 Philippine Heart Center employees 20 years old and above who has elevated serum cholesterol level with 0-1 risk factor based on ATP III guidelines [NCEP III]. They were given 2,000 mg of ascorbic acid for 3 months. At the end of 3rd month, lipid profile was repeated and compared with levels obtained from baseline. There were no specific diet modifications during the entire study period except that which have been given by the infirmarian. Patients who are taking any kind of multivitamins was advise to discontinue it temporarily to avoid interference with the result. **Results:** The mean baseline total cholesterol, LDL, Triglycerides, and HDL level were 226.32 mg/dL, 139.95 mg/dL, 110.81 mg/dL, and 59.64 mg/dL respectively. For total cholesterol, the mean effective change of Vitamin C supplementation was 38.49 mg/dL [SD 90.09 ± 11.73; P= 0.002]. For LDL cholesterol, the mean effective change was 23.39 mg/dL [SD 57.26 ± 7.49; P= 0.003]. For triglycerides, the mean effective change was 25.85mg/dL [SD 66.94±8.72]; P= 0.004]. For HDL cholesterol, the mean change shows a decreased of 11.92mg/ dL [SD 28.46±3.71; P= 0.002]. **Conclusion:** This study indicates that supplementation with 2 grams of vitamin C for 12 weeks or 3 months can result to a significant decrease in serum total cholesterol, LDL-C and triglyceride concentrations. However, there was also a significant reduction in the HDL-C level. Although there was a negative change on HDL-C, changes on Total cholesterol, LDL-C and triglycerides can have beneficial effects on the incidence of coronary heart disease, especially in the light of the low cost and when supplementing vitamin C within the non-toxic range.

PHC.R.065.07

N-terminal Pro- Brain Natriuretic Peptide as Predictor Mortality in Patient with Acute Coronary Syndrome

Marie Lanayan Mejias, MD; Arthur Ferrolino, MD

Objectives: The primary objective of this study is to determine the prognostic value of NT pro BNP as a predictor of mortality in patients with Acute Coronary Syndrome. It specifically aims to determine specificity and sensitivity of NT pro BNP as marker for the occurrence of mortality in post ACS patient. **Background:** Cardiology, biochemical markers are already proven useful for diagnosing and predicting major adverse cardiac events in patients with acute coronary syndrome (ACS). Recently, advances in our understanding of the pathogenesis and consequences of acute coronary syndrome have stimulated the discovery of new biomarkers that help to restratify our ACS patient and help us treating our patients. **Method:** Patient admitted at Philippine Heart Center diagnosed with Acute Coronary Syndrome were included in this cohort study starting February 2009 until July 2009. Venous blood samples were extracted on admission for NT pro-BNP level determination using Co-bash 232 instrument. The study primary endpoint was the occurrence of death during hospitalization, at 30 days from the index chest pain, and 6 months after. Follow-up was performed by outpatient visits of patients and by thru telephone interview. Patients were divided into quartiles on the basis of their NT pro-BNP levels. Means was expressed with 1 SD for continuous variables. Differences in categorical baseline variables between quartiles was evaluated with *T* tests for trend. Differences between mean or median values for continuous variables was evaluated with either l-way ANOVA or Kruskal-Wallis tests, as appropriate. **Result:** A total of ninety three patients were enrolled in the study from February 2009 to July 2009. Of these, twenty-eight patients (30 %) presented with ST elevation MI, fifty one patients (54 %) with non ST elevation MI and fourteen (15 %) presented with unstable angina. Starting from admission until a median duration of follow-up to six months ,a total of seventeen patient died seven of which, died while still admitted, the other six (6) died post discharge. Based on result, In hospital mortality (during the confinement) reaches to a total of eleven patients (12%) with a linear correlation of the value of NT pro-BNP level (p value of 0.001) and with a sensitivity of 45.5 % and specificity of 86.6%. After a median follow-up of 6 months, seven patients died (7%). The observed linear pattern of relationship of the level of NT Pro BNP in mortality was also noted post discharged. Computed sensitivity and specificity, were 33.3% and 87.8% respectively. As expected, the total Mortality also increases with increasing value of NT pro BNP. However also noted is that the overall sensitivity and specificity of NT pro BNP level in predicting the mortality of patient in short (In Hospital) and long term (follow -up) in of ACS patient, showed increasing specificity of NT pro BNP with increasing quartile value from 37.3% Group 2(NT pro BNP of 1500 pg/ml-2250 pg/ml) to 88.0% Group 4 (NT pro BNP > 3000 pg/ml) while its sensitivity decreases with increasing values as shown by 100 % sensitivity in group 2 (NT pro BNP value of 1500 pg/ml-2250 pg/ml) to 41.2 % on group 4 (NT pro BNP >3000pg/ml) **Conclusion:** This study confirmed the previous observation published in the different studies regarding the use of NT pro BNP as a predictor of short term and long term mortality of ACS patient it showed a trend of Increasing mortality rate with increasing value of NT pro-BNP, therefore it is a go predictor of mortality.

PHC.R.066.07

Low Voltage QRS in ECG as a predictor of Morbidity and Mortality Among In-hospital Patients with Heart Failure Secondary to CAD in the Philippine Heart Center

Francoise May A. Sarmiento, MD

Background: The 12 lead ECG is a widely used tool in the clinical practice of medicine. It is an invaluable tool in the diagnosis and management of cardiac patients. The 12 lead ECG has also been a determinant for risk assessment of patients with coronary artery disease (CAD) and congestive heart failure (CHF) or left ventricular dysfunction. Several studies have implied that QRS voltage in the 12 lead ECG can suggest the clinical outcomes among patients with CAD and CHF. However, there are conflicting results on whether low or high voltage QRS complexes pose a graver prognosis among these patients. In 1975, Fox et al., proposed that patients in CHF, particularly those with left ventricular systolic dysfunction secondary to prior myocardial injury

are at risk to have low QRS voltage on ECG. Subsequent studies on low voltage QRS suggests that this condition is associated w th clinical deterioration of heart failure. However, the prognostic implication of such marker has not been fully established. This study aims to establish the value of the low voltage criteria in the outcome prognostication among patients with heart failure secondary to left ventricular dysfunction in the setting of coronary artery disease.

PHC.R.067.07

Blood Conservation Therapy in CABG Surgery

Jay Alan E, Junio, MD

Background: There is very strong evidence that patients who receive more blood have more post-operative infection, have more renal failure and have more lung dysfunction. Multiple factors, including shortages, costs, infectious risks, immunologic risks, and the risk/benefit ratio to the patient, have made the medical community reassess the guidelines for transfusion. Cardiac surgery presents a unique subset of patients, because intervention at multiple stages in the care of these patients is possible to decrease the need for transfusion. Intraoperative processing of blood withdrawn before cardiopulmonary bypass provides autologous platelet-rich plasma for in fusion after reversal of heparin sodium. **Objectives:** To evaluate the efficacy of autologous transfusion and cell salvage in decreasing exposure to allogeneic red cell transfusion in adults undergoing elective cardiac surgery. **Study Design:** Randomized Controlled Study. **Methods:** Patients who will undergo initial coronary operation will be randomized into two groups. Group I patients will undergo conventional CABG without the use of auto transfusion and cell salvaging technique. Group II patients will likewise undergo initial CABG with the use of autologous blood transfusion and cell salvaging technique in Group II patients, whole blood was withdrawn after the induction of anesthesia and before systemic heparinization and collected into sterile blood collection bags, blood collected from the field during operation and blood remaining in the oxygenator after bypass are processed to yield washed and concentrated red blood cells for reinfusion. The blood collected and shed blood are re-infused once cardiopulmonary bypass has been finished. Post-operative hematologic profile and amount of administered blood products are compared between the two groups. **Data Analysis:** Continuous data like blood requirement and hematologic profile will be presented in mean and standard deviation. Categorical data like clinical parameters and history will be presented in frequency and percent distribution. Homogeneity of the population will be determined using *T*-test and chi square test. Hematologic profile and transfused banked blood will be compared using t-test at $P<0.05$ will be considered significant.

PHC.R.069.07

FEV6 As An Alternative of FVC in Detecting Restrictive Spirometric Pattern Among Filipinos

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Background: Forced vital capacity has been used for screening patients with restrictive lung defect. The effort to empty the lungs completely in order to reach FVC can be particularly difficult form some patients. Because of this, the National Lung Health Educations Program has proposed using FEV_6 and the FEV_1/FEV_6 ratio, in diagnosing obstructive lung defect and screening restrictive lung defect, but there are only some data supporting this. The aim of this study is to compare FEV_6 to FVC in detecting restrictive spirometric pattern. **Methods:** This is a reliability prospective study involving 449 spirometric studies over a period of 1 year comparing FEV_6 FVC in detecting restrictive spirometric pattern. **Results:** Of the 449 spirometric studies, there were 271 subjects found with restriction in both FVC and FEV_6; 167 subjects were found to have normal findings in both FVC and FEV_6. Only eleven (11) subjects were found to be discordant which normal on FVC and restricted by FEV_6. This gives FEV_6 a sensitivity of 100% and specificity of 93%. **Conclusion:** FEV_6 can be used as an alternative in screening for spirometric restrictive pattern.

PHC.R.070.07

The Agreement Between the Chest CT Scan and Chest X-Ray Findings in Tuberculin Positive Children- a prospective study

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Background: Because of the lack of sensitive test to confirm the diagnosis of pediatric TB, attempt to correlate chest radiograph and chest computed tomography (CT) scan among children with tuberculin positive skin test would be an important diagnostic modality in confirming diagnosis of TB disease. This study aims to determine the level of agreement between chest radiography and chest CT scan among tuberculin positive children. **Methods:** This is a cross sectional study involving all children ages 6 months to 18 years old, with a tuberculin positive test as interpreted by conventional criteria, with symptoms like cough, history of contact, cough and other non-specific symptoms like fever, weight loss, hemoptysis, anorexia, dyspnea, weakness and diarrhea with parental informed consent. Chest radiographs were interpreted by 3 radiologists blinded to the clinical diagnosis of the patients and chest CT scan were read by three readers blinded to both the clinical diagnosis and results of previous chest radiographs. A concordance rating of positive or negative significant lymphadenopathy was obtained by kappa-values at 0.05 level of significance. **Results:** A total of 98 children met the inclusion criteria and were included in the final analysis. There were 49% males and 51% females with the ages 4-5 and 9-11 commonly affected among males and 6-8 years among females. There was poor inter-rater agreement for other forms of lymphadenopathy on chest radiography same for reticular lesions (100%). The three readers had high inter-rater agreement on CT scan (87.5% -93.8%), highest for granuloma and peribronchial nodes (both 100%). Levels of inter-rater agreement for radiography against CT scan in the discrimination of abnormal from normal findings were low. The overall agreement between the chest x-ray compared to chest CT scan had a kappa value of 0.084 ± 0.095 with a p value of 0.189 which is not statistically significant. **Conclusion:** There is low agreement in the interpretation of chest CT scan versus chest x-ray in tuberculin positive children. More precise descriptors for positive CT scan for diagnosing Primary tuberculosis in children in contrast with chest radiographs in which must be sought to accurately standardize the readings since the sensitivity and specificity of chest x-ray were only 75% and 67 % respectively. The overall positive predictive value for diagnosing TB disease in children using chest x-ray was only 59% compared to chest CT scan which was 98%.

PHC.R.071.07

Natriuretic Peptide as Predictors of morbidity and Mortality Among Patients with Chronic Aortic Regurgitation: Philippine Heart Center Setting

Rolijun Torio, MD; Warren S. Rondilla, MD

The need for a reliable method to risk-stratify symptomatic patients, especially in heart failure with aortic regurgitation is increasingly being explored as a screening tool, especially in an emergency setting. Biomarkers such as the Brain Natriuretic peptide (BNP), a 32 amino acid peptide released from the ventricular myocardium in response to ventricular pressure and volume load could potentially fill this role. Their levels are elevated in a variety of cardiovascular disorders such as myocardial infarction, congestive heart failure, and pulmonary hypertension and certain valvular disorders. This study determined the relationship of levels of Brain Natriuretic Peptide with mortality and morbidity among patients with Chronic Aortic Regurgitation. To serially evaluate Brain Natriuretic Peptide (NT-pBNP) serum levels in patients with chronic aortic regurgitation (AR) assessed by two-dimensional echocardiography, venous blood samples were drawn in 25 patients. Correlations between NT-pBNP and clinical data were assessed by non-parametric statistics. Median NT-pro-BNP was being

normal or mildly increased in 20 patients, overly increased in five. The correlation analysis of NT-pro BNP and clinical parameters was tested by Pearson Correlation, where correlation is significant at the 0.01 level. Results showed among the 25 patients gathered, 52% have decompensated heart failure, majority of which presented with orthopnea and PND, and have a strong history of valvular heart disease, particularly aortic valve heart disease.

PHC.R.075.07

Predictive Factors for Spontaneous Closure of Congenital Ventricular Septal Defects Among Filipino Children Seen at the Philippine Heart Center: a Retrospective Review

Alma Fe Valeria G. Basco, MD; Eduardo Manrique, MD; Jhuliet Balderas, MD

Background: The reported rate of spontaneous closure of ventricular septal defect (VSD) varies greatly, depending on the population studied and method of investigation. It is estimated that about 25% of VSD will close; however, patients followed from birth have a higher rate of spontaneous closure, with predictions of closure of 50% and up to 75% in asymptomatic patients with small VSD. Rates of spontaneous closure of specific types of VSD are not well established. Various factors for predicting spontaneous closure of VSD in children, however, have never been investigated. **Objectives:** To determine the factors that are associated with the likelihood of spontaneous closure of congenital ventricular septal defect among Filipino children. **Methods:** Patient record of children a seen at the Pediatric Cardiology of the Philippine Heart Center from January 2000 to December 2006, ages 2 months or younger, with diagnosis of isolated ventricular septal defect, will be reviewed. Initial echocardiogram study done upon diagnosis, and follow-up echocardiograms will be reviewed until age 5 years, or until December 2006 whichever is longer. Only those who had at least two 2D-echo, at a minimum of 6 months interval, will be in cluded in the study. Patients with combined lesions will be excluded. **Data Analysis:** Data will be expressed as standard deviation. t-tests will be used to compare variables. The chi-square test will be used to assess differences between groups for categorical variables. Statistical significance will be inferred at $p < 0.05$.

PHC.R.077.07

Long Term Evaluation of Cardiac Status Post Tetralogy of Fallot Repair in Infancy and Childhood - a 10 year Review

Suzette M. Perfecto, MD

Background: Tetralogy is the most common cyanotic heart disease in children and its corrective surgery had led to excellent survival. However, it is a necessity to conduct long term follow up to monitor and assess the need for intervention following failure in restoration of the normal anatomy. **Objectives:** To assess the symptomatology, cardiac status (ie: ECG, 2D-echo) and functional capacity through a 6 minute walk test of all pediatrics patients who underwent Tetralogy of Fallot correction. **Methods:** Charts of all pediatric patients who underwent Tetralogy of Fallot correction in this institution from January 1, 1996 to December 31, 2005 will be reviewed and patients will be divided into 3 groups depending on the procedure done. Trans-annular patching, right ventricular outflow patching and infundibulectomy and their subjective complaints, electrocardiography and transthoracic echocardiographic findings will be noted. Patient will then be recalled, diagnostic work ups will be repeated, and will be scheduled for a 6 minute walk test. **Data Analysis:** The

presence or absence of symptoms and electrocardiography findings will be expressed via frequency distribution. The echocardiographic findings will be interpreted using multivariate analysis.

PHC.R.081.07

Correlation between Stress and Rest Left Ventricular Ejection Fraction in Gate Single Photon Emission Computed Tomography (SPECT) with the Extent and Severity of Perfusion Abnormalities

Alvin P. Quinon, MD; Jerry M. Obaldo, MD

Objectives: Exercise-induced myocardial stunning has an impact on the left ventricular function which correlates with the prognosis in patients with coronary artery disease. The objective of the study is to compare rested stress left ventricular ejection fraction (LVEF) stratified according to the extent an severity, summed stress score (SSS), of perfusion defects. **Methods:** The study group comprises of 106 patients (61 ± 11 years), with a history of ECG abnormalities, who underwent Tc-99m SestaMIBI rest-stress protocol. Patients are grouped based on their SSS score (0-3 normal, 4-8 abnormal, >9 severely abnormal, Groups 1-3 respectively) in a 17 segment model with semi-quantitative visual scoring. Rest and stress LVEF and their differences (Δ EF) are compared among the groups. **Results:** A total of 212 studies (n=106, 61 males, 45 females) with a mean ± SD resting and stress LVEF are seen in the following groups: Group 1 (n=54): 71.0% ± 10.0%, 71.3% ± 9.7% p= 0.019, Group 2 (n=23): 63.2% ± 18.3%,48.0% ± -60.78 (p= .000) and Group 3 (n=29) 48.1% ± 17.0%,44.9% ± 16.0% (p = .000). Statistically significant positive difference in EF (rest - stress) was observed in Group 3 with a mean ± SD of 3.1% ± 5. % (p =0.002) and Group 2 with 2.4 % ± 4.9%. A negative (Δ EF) in Group 1, mean ± SD of -0.28% ± 3.4%, is not significant (p= 0.55). **Conclusion:** Gated SPECT performed shows a decreasing trend in resting and stress left ventricular ejection fraction as the extent and severity of perfusion abnormalities increased. The data suggests that myocardial stunning can be observed with a positive Δ EF in patients with abnormal SS (>4).

PHC.R.084.07

The Utility of Cardiac Apex Measurements in Upright Posteroanterior Chest Radiographs in Determining Ventricular Enlargement

Vincent R. Tatco, MD; Kurt Glen C. Jacoba, MD

Background: Displacement of the cardiac apex in the chest radiograph is one of the signs used in determining right or left ventricular enlargement. However, there is limited data regarding the objective assessment of the cardiac apex position for such purpose in the upright postero-anterior chest radiograph. **Objective:** This study was undertaken to determine the utility of measurements of cardiac apex position in the chest radiograph in detecting ventricular enlargement. **Methods:** This retrospective study included patients over the age of 18 years who had undergone echocardiography and chest radiography at the Philippine Heart Center between June 2007 and September 2007. Radiographic measurements of the cardiac apex position in upright poster anterior chest films were compared with echocardiographic findings. **Results:** Chest radiographs of 306 patients who underwent echocardiography at the Philippine Heart Center were included in this study. Patients with normal ventricular dimensions by echocardiography (41%) have a mean cardiac apex - carinal vertex (AV) distance of 14.7 (± 1.3) cm, mean cardiac apex - diaphragm (AD) distance of 4.7 (± 1.4) cm, and mean cardiac apex - diaphragm / carinal vertex - diaphragm (AD/VD) ratio of 2 0.30 (± 0.05). Patients with right ventricular dilatation and normal-sized left ventricles (12%) have a mean AV distance of 15.7 (± 1.3) cm, mean AD distance of 5.6 (± 1.7) cm, and mean AD/VD ratio of 0.32 (± 0.08). Patients with dilated left ventricles and normal sized right ventricles (38%) have a mean AV distance of 16.6 (± 2.1) cm, mean AD distance of 3.6 (± 1.3) cm, and mean AD/VD ratio of 0.22 (± 0.07). Patients with biventricular dilatation (9%) showed a mean AV distance of 17.9 (± 1.9) cm, mean AD distance of 4.3 (± 1.4) cm, and

AD/VD ratio of 0.25 (± 0.07). All radiographic parameters between the groups showed significant overall mean differences in their values. Optimal cut-off points for each radiographic parameter were determined using receiver operating characteristic curves. **Conclusion:** Radiographic measurements of cardiac apex position may be useful tools to assist clinicians and radiologists in evaluating ventricular enlargement in patients.

PHC.R.085.07

Outcome of Patients with Solitary Cold Nodule

Raphael U. Peralta, MD

Background: Thyroid nodules are common in the general population and about half of all nodules detected on physical examination are solitary nodules. The importance of solitary nodules lies in the increased risk of malignancy compared with other thyroid swellings. A selective approach must therefore be used to determine who will benefit from thyroidectomy from those who can be observed or treated medically. The challenge therefore in clinical practice is to identify in a highly reliable and cost effective manner, the small number of patients presenting with neoplastic disease from the majority with out, in the process sparing up to 90% of patients the unnecessary surgery. **Objective:** To determine the outcome of patients with solitary cold nodule by thyroid scintigraphy done in the Philippine Heart Center Nuclear Medicine Division. **Methods:** The study will include patients who underwent thyroid scintigraphy using Tc-99m pertechnetate in the Nuclear Medicine Department of the Philippine Heart Center from January to December 2007.

PHC.R.087.07

The use of Jackson Pratt Drain Following Open Heart Surgery

Jonathan R. Alo, MD; Renato R. Pacis, MD

Objectives: To determine the usefulness of Jackson Pratt drain as adjunct to the conventional semi-rigid mediastinal tube in an adult population after cardiac surgery. **Design:** A prospective cohort study of adult patients who underwent cardiac surgery with cardiopulmonary bypass at the Philippine Heart Center from January 1, 2007 to March 31, 2007. **Methods:** A total of 165 patients underwent open-heart surgery in our institution. Postoperative pericardial decompression was undertaken using a semi-rigid tube plus a Jackson-Pratt draining tube in the intervention group and a semi-rigid tube alone in the control group (Group B). Data were analyzed as to the age of the patient, weight, operative procedure done, total cross-clamp and total bypass time, total amount of drainage, average time of tube removal, length of postoperative stay, appearance of postoperative chest radiographs and echocardiograms, and need for further drainage from pericardial spaces. **Result:** One hundred sixty-five patients were included in the study. Male to female ratio is 10560. Sixty-seven (40.61 %) patients under Group A (Inter vention Group) received the semi-rigid tubes plus a Jackson-Pratt drain placed in the retrocardial space and 98 (59.39%) patients under Group B (Control group) only had the semi-rigid tube. There were more males operated for cardiac surgery, 38 (23%) were in group A and 67 (40.61%) in Group B while there were only 29 (176%) females in Group A and 31 (1879%) in Group B. Chi-square test showed no significant difference in gender in between the two groups. The difference in between the two groups in age, weight, length of hospital and postoperative stay, number of days with semi-rigid tubes, total chest tube output, bypass time and cross-clamp time were not significant. Pericardial effusion occurred in 15 (9%) patients and was more common on the patients who underwent valve replacement Majority of these were classified under minimal pericardial effusion. Although more common on Group B, the difference was not significant **Conclusion:** No significant differences were noted in the occurrence of pericardial effusion in patients drained with conventional semi-rigid tube as compared to the semi-rigid tubes plus the Jackson-Pratt drains after cardiac operations. Though not statistically significant, there may actually be an advantage of Jackson-Pratt drains over conventional chest tubes in this regard. There was also no significant difference in the type of surgical procedure, total bypass and cross clamp time, amount of drainage, number of days with the semi-rigid

tubes, length of postoperative stay, and length of hospital stay and incidence of post-operative pleural effusions.

PHC.R.088.07

Post-operative Outcomes of CABG Patients Given Blood Transfusion based on Society of Thoracic Surgeons Guidelines on Blood Transfusion

Jay Alan E. Junio, MD; Rey Gamponia, MD

Background: The worldwide practice in cardiac surgery regarding blood transfusion is towards a more conservative approach. The aim of the present study is to compare the post operative outcome in terms of mortality and duration of mechanical ventilation among patients undergoing first-time CAB using the STS Guidelines threshold in transfusion and the current practice at PHC. **Methods:** All adult patients aged 18-65 years undergoing elective cardiac surgery including aorto-coronary bypass, heart valve replacement and correction of congenital cardiac anomaly at the Philippine Heart Center starting September 2008 until August 2009 were included in the study. Patients were randomized to Group 1, Restricted Group and Group 2, Liberal Group. Decisions regarding intra-operative and post-operative blood transfusion for the Liberal Group were made by the attending surgeon and anesthesiologist. For the Restricted group, decisions on blood transfusion were based on the STS Guidelines which is packed red cells will only be transfused for haemoglobin values less than 7gm/dl. Post-operative outcome in terms of duration of mechanical ventilation and mortality were evaluated. **Results:** A total of 71 patients were enrolled in the study. Thirty-four were randomly assigned to the Restricted transfusion group and 37 to the liberal transfusion group. The average age of patients included in the Restricted Group was 44 years while patients of the Liberal Group had an average age of 47 years. Preoperative factors were homogenous for both groups. Preoperative hemoglobin and hematocrit values were significantly higher for the Restricted Group. The amount of packed red cells transfused was significantly higher in the Liberal Group, 2.35 ± .53 units, compared to the restricted group, 0.18 ± 0.75 units with a p value of 0.00. Comparison of mediastinal drainage revealed lesser amount in the Restricted Group, 132.21 ± 63.10 ml, then the Liberal Group, 195.27 ± 81.10 ml with a p value of 0.01. Duration of mechanical ventilation was shorter among the Restricted Group with only 14.7% requiring >48 hours of MV compared to 43.24% for the Liberal Group, with a p value of 0.18. Mediastinal chest tubes were removed earlier in the Restricted Group with only 11.76% having CT >48 hours compared to 45.94% patients in the Liberal Group, p value 0.00. Other outcome variables such as post-operative dialysis, inotropic support >48hrs, sepsis, arrhythmia and hospital stay was not different for both groups. No mortality was recorded for both groups.

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Knowledge, Attitudes and Practices of Pediatrician on the Diagnosis and Management of Pediatric Community Acquired Pneumonia in Selected Areas in the Philippines

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Background: Pediatric community acquired pneumonia is a major health concern in the Philippines. It is a common encountered infection associated with significant morbidity and mortality which contributes a major expenditure to health care delivery system. Thus, a local clinical practice guideline on the diagnosis and management of pediatric community-acquired pneumonia was formulated through the initiative of the Philippine Pediatric Society with the collaborative efforts of societies and agencies involved in the care of patients with pneumonia. This effort aimed to provide quality health care by providing options that promote practices with scientific basis and discourage ineffective or harmful intervention in the rational approach to the treatment of community acquired pneumonia. **Methods:** We conducted a cross-sectional survey among pediatricians in selected areas in the Philippines. A survey multiple choice questionnaire based from the questionnaire of Based AU et al. in the study entitled Knowledge, Attitude and Practice of Pediatricians, Family Physicians and General Practitioners in the Philippines on the Diagnosis and Management

of Community Acquired Pneumonia in Children which contains the demographic profile of the respondent and questions on the evaluation and assessment of the PPS- PCAP CPG including their knowledge, attitudes and practices in the diagnosis and management of PCAP was used in this study. Results were tabulated using Microsoft Excel. Frequencies and percentage were determined for each item in the questionnaire. **Results:** One hundred sixty two pediatricians aged 29-70 years old (mean = 39.4) from different areas of the country were included in the study, most of which are females (68.5%), and have been practicing for less than 5 years (53.7%). One hundred fifty one (93.2%) of the respondents are aware of the existing local clinical practice guidelines on pediatric community acquired pneumonia and 45.7% of them learned of the CPG through academic meetings. One hundred fifty four (95.1%) of the pediatricians think that history, physical examination and clinical symptoms are important tools to arrive at a diagnosis of pneumonia. Most of the respondents, 79% would not always but sometimes request for initial chest radiograph but always think that presence of lung abscess (82.7%), pleural effusion (80.2%) and alveolar consolidation (69.1%) suggest severity of the disease .53.7% of respondents would sometimes feel the need to admit patients with PCAP and almost all of the respondents (90.1%) feel the need to admit patients with moderate and high-risk pneumonia (PCAP-C/D.) One hundred forty two (87%) respondents agreed to switch to oral antibiotics after a certain time when IV antibiotics was used as initial management. Almost all of the respondents agreed to switch IV to oral antibiotics when patient is able to feed with intact GI absorption (87.7%), responding to initial therapy (85.8%) and 57% of the respondents deemed to agree to switch IV to oral antibiotics when necessary after 3 days. Eighty-nine (54.9%) would request for other diagnostic work up to confirm the diagnosis of PCAP. Most of the respondents would always request for Complete Blood Count (46.3%) to confirm their diagnosis of PCAP, ESR (3.1%) and CRP (2.5%), sputum GS/CS (9%) and blood culture (7.4%) for confirmation of pneumonia were not routinely done by the respondents. Respondents always recommended Amoxicillin (73.5%) for treatment of PCAP A. Cefuroxime (48.8%) and Co-Amoxiclav (38.9%) were always the top choices of antibiotics used for PCAP B while Cefuroxime (51.2%) and Ampicillin-Sulbactam (40.1%) were the antibiotics that were always used by the pediatricians for PCAP C and D. Most of the respondents (90.1%) would always treat their patients with antibiotics for 7 days or more while 60.1% of the respondents would sometimes extend their treatment to 14 days. Most of the respondents (58%) will always refer to specialists if complications occurred and sometimes refer to specialists for wrong diagnosis (54.3%), if patient has been given several antibiotics prior to admission (53.7%) and patients did not respond to antibiotics after 72 hours (51.2%), Most of the respondents will always request for a chest radiograph after the course of treatment (67.9%). Most of the respondents always recommend respiratory vaccine (62.3%) such as Influenza (32%), Pneumococcal (31.4%) and Hib (30.8%) vaccines **Conclusion:** Variations in diagnostic and therapeutic decisions are still observed and adherence to the guidelines is not being optimized.

PHC.R.092.07

Arandomized,Prospective,ComparativeStudy on Dexmedetomidine vs Propofol Used for Post-operative Sedation of Adult Cardiac Surgery Patients on Mechanical Ventilation

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Background: The aim of sedation in the post anesthesia care unit after cardiac surgery is to keep patients comfortable, calm, and without pain. Most patients require sedation and analgesia to modulate physiologic responses to stress (tachycardia and hypertension) while these patients are being weaned from the ventilator. Currently, several sedatives and other agents are used to achieve these goals. The anesthetic propofol is commonly used in the post-anesthesia care unit for short-term sedation of ventilated post-surgical patients. Opioids are often given with propofol because propofol alone has no an algesic property. Propofol is known to cause hypotension due to its vasodilatory effects, and this may be significant on patients with unstable vital signs and limited myocardial reserve.

Propofol may also cause some respiratory depression, an effects that can be augmented with the use of opioid. Consequently, clinicians have adapted its use to minimize these risk and avoid respiratory depression by discontinuing propofol before weaning. These eliminates the purpose of sedation at times of stress. Dexmedetomidine, a highly specific α2-adrenoceptor agonist may provide sedative effect by stimulation of α2-adrenoceptor in the CNS. Sympathetic activity is reduced and norepinephrine release is inhibited. At clinically effective doses, continuous sedation with intravenous dexmedetomidine does not interfere with normal course of ventilator weaning and extubation because it does not depress respiratory drive. **Methods:** Patients aged 18 years old and over scheduled for elective cardiovascular procedures under cardiopulmonary bypass and for mechanical ventilation postoperatively was entered in the study. Patient was randomly assigned to one of two groups using a computerized randomization system to receive either propofol or dexmedetomidine once patients was in the stage of emergence. Hemodynamic effects, levels of sedation, time of weaning, time of extubation and number of rescue doses were recorded. **Data Analysis:** To determine the heterogeneity of the two population, T-test and chi-square test was used. Comparison of outcome parameter between the 2 groups will be carried out using t-test or analysis of co-variance if heterogeneity exists in baseline characteristics. A p-value of <0.050 was considered significant. Continuous data were summarized as mean and standard deviation while quantitative data was presented as frequency and percent distribution. **Result:** Age and gender distribution, weight and height, type of co-morbidities, type of surgery systolic BP at baseline and baseline heart rate did not differ significantly between the two group. The type of intervention did not significantly affect systolic pressure and heart rate up to 14 hours after administration. The fentanyl used for rescue doses among subjects given propofol was significantly higher than among subjects given dexmedetomidine. For all other adverse effects such as hypertension, hypotension, tachycardia and bradycardia, the number of episodes which occurred did not differ significantly. Mean sedation levels were within target ranges in both groups. The type of intervention did not significantly affect mean time to weaning, mean time interval when patient is ready for extubation and mean time interval when patient is actually extubated. **Conclusion:** Dexmedetomidine provided safe and effective sedation for patients on mechanical ventilation who underwent open heart surgery and significantly reduced the use of analgesics.

PHC.R.094.07

Outcomes of Urgent Coronary Artery Bypass Grafting After Acute Coronary Syndromes According to Timing of Surgery

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Background: Urgent Coronary Artery Bypass Grafting (CABG) after Acute Coronary Syndromes (ACS) has evolved in the past years to include a more heterogenous group of patients with a more varied range of symptoms and severity. The current status of practices and outcomes of these cases in a high-volume center such as the Philippine Heart Center (PHC) is not well documented. It is the objective of this study to determine the in-hospital outcomes of patients under going urgent CABG after ACS at the PHC. **Methods:** Patients admitted at the PHC diagnosed with ACS for CABG in the same admission were included in the study. A total of 93 patients were enrolled. Data were gathered from the patient's chart, n ting baseline characteristics and pre-operative cardiac indices, as well as the presence of risk factors. Timing of surgery after ACS was noted, with intra-operative data such as hypotension and the need for intra-aortic balloon insertion at the OR also recorded. The cardiopulmonary bypass time and cross clamp time were recorded and post-operative in-hospital outcomes such as mortality and morbidity, length of stay and common complications were gathered. **Results:** In this cohort study, the mean age of the subjects was 61.04 years old, with a 3:1 male preponderance. Hypertension was present in 89% of all patients, while almost a third had diabetes. Fifty-eight percent of patients had LV dysfunction, with about half of all patients with intra-aortic balloon counterpulsation support preoperatively. More than 95% of patients had 3 vessel coronary artery disease or the presence of left main involvement. Of the

93 patients, 51 were from Group 1 (1-7 days after ACS), 27 were from Group 2 (8-14 days after ACS), an 15 from Group 3 (> 14 days after ACS). Left ventricular ejection fraction from ST-elevation Myocardial Infarction (STEMl) patients was found to be significant among the groups. Hypotension within 48 hours of admission as well as pre-bypass hypotension were more common in Group 1 patients with STEMI. Bypass times and cross clamp times were longer in STEMI cases, though average vessels grafted were similar for all ACS classifications. Revascularization was completed in more than 80% of all patients, with blood component use similar among groups, irregardless of timing of surgery. Length of post-operative hospital stay was significant in Non-ST Elevation Myocardial Infarction (NSTEMI) patients, with the most number of days in Group 3 patients. All-cause mortality rate was computed at 9.7%, with 4 of the 9 patients from the Group I patients with STEMI. **Conclusion:** Among patients with acute coronary syndrome, the presence of low ejection fraction in the setting of STEMI may affect outcomes. Furthermore, a longer postoperative stay may be expected among patients with NSTEMI operated 2 or more weeks alter acute coronary syndrome. Morbidity and mortality of patients after urgent CABG for ACS may be affected by the presence of STEMI and early surgery. Timing of urgent coronary artery bypass grafting may remain to be arbitrary and dependent on the clinical status of the patient.

PHC.R.002.08

The Feasibility of Using Personal Computer with High resolution Display for the Viewing and Reporting of Cranial Computerized Tomography Series by Radiologist

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The feasibility of using computer with high resolution display monitors for the viewing and reporting of intracranial hemorrhage in non-contrast cranial computerized tomography (CT) series by radiologists was evaluated in this prospective study. From August 15, 2008-January 27, 2008, a total of 74 DICOM data sets on non-contrast cranial CT scans were sent as an email attachment for review by a radiologist in a remote location, in addition to the reading at the workstation. The image were retrieved, decompressed, and reviewed using MxLiteView Version 1.24 software in the laptops with high resolution monitors. There was very good agreement between the diagnosis made in the workstation with those done in remote laptop computers (kappa = 0.95 ± 0.12, p=0.00). There was no significant difference between the time involve in obtaining a reading from the remote reader and from reader on-call at the workstation ($p < 0.05$). The whole procedure of obtaining a reading from the radiologist on call at the workstation took an average of 22.5 minutes. Commercially available laptops with high resolution monitor can therefore be used for the viewing and reporting of Cranial Computerized Tomography (CT) Series because it as accurate as reporting of the workstation for determining the presence of acute intracranial hemorrhage and do not delay relaying the result.

PHC.R.007.08

Predictors of Arrhythmia in Children Undergoing Congenital Cardiac Surgery at the Philippine Heart Center

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Background: Arrhythmia is a frequently encountered problem post-operatively in patients undergoing cardiac surgery in adults and children alike which poses additional resource burden and may contribute to unfavourable post-operative outcomes. Despite this, to date we have few data identifying the risk factors in the occurrence of arrhythmia post-operatively. **Methods:** All patients aged 0 to 19 years old who underwent open heart surgery between June 2009 to May 2010 were included in the study. Their charts were retrieved and the following were noted: significant postoperative arrhythmia. The following parameters were measured and noted: age during surgery, weight, sex, pre-operative rhythm strip for presence of arrhythmia, type of surgery, cyanotic or acyanotic heart disease, total bypass time, total cross-clamp time, use of deep arrest, electrolyte levels post-operatively (Na, Ca, K,

Mg), blood sugar levels immediately post-operative PRBC transfusions, residual defect post-surgery, redo-operations, temperature, pre-operative medications. The data was presented as frequency and percent distribution, mean and standard deviation. Association of the different factors with occurrence of arrhythmia with T test, chi-square test or Mann Whitney U Test. Two-tailed value of $p \leq 0.05$ will be considered. **Results:** In the study, a total of 184 patients (109 males, 75 females) patients who underwent open heart surgery for congenital lesions were included. Patients' age ranged from 0.01 year old to 18 year old with a mean of 5.9 year old. The mean weight was 22.7kg. 53 were with cyanotic heart disease and 108 were with acyanotic heart disease. Of the cyanotic heart disease, TOF was the most common comprising 51% and VSD was the most common in the acyanotic heart disease at 45%. Of the subjects, 19.5% developed arrhythmia post-operatively. Only cross clamp and bypass time were significant predictors of arrhythmia. **Conclusion:** Longer cross-clamp and bypass time are predictors of post-operative arrhythmia occurring in the first 48 hours post-operatively. The most common post-operative arrhythmia was premature ventricular contraction.

PHC.R.008.08

The Association of Post-Operative Cognitive Outcome, Perioperative Factors and the Timing of Surgery in Tetralogy of Fallot Patients

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Objective: Among the cyanotic heart diseases, Tetralogy of Fallot is the most common in children. These patients are exposed to prolonged decreased blood supply that might affect their neuro-developmental outcome. To determine the association of post-operative cognitive outcome, perioperative factors with the timing of surgery in Tetralogy of Fallot patients. **Specific Objective:** To determine the post-operative cognitive outcome, its association with the timing of surgery, and to determine the association of the timing of surgery with the peri-operative characteristics such as oxygen saturation, hematocrit, number of phlebotomy, length of ICU stay and neurological complication like seizure or neurologic deficits in patients who underwent total correction of TOF. **Methods:** There were 29 subjects included in the study aged ≥15 years old, diagnosed with Tetralogy of Fallot through 2D echo who underwent TOF total correction at age of more than or less than 5 years old. They took an intelligence test, "*Panukat ng Katalinuhang Pilipino*" scores were transmuted to percentile ranks and interpreted. Results compared to timing of surgery and perioperative characteristics. Statistical analysis used were T test and analysis of co-variance. **Results:** There were 8 subjects in Group 1 (operated less than 5 years old) and 21 in Group 2, (operated more than 5 years old). Among the perioperative factors, only weight and bypass time differ significantly in association with the timing of surgery thus the p value was adjusted accordingly. Only the verbal subtest had significant association with the timing of surgery with p value of 0.028 that can be explained that TOF patients have language difficulties especially in expressive and receptive language which could be the cause of the lower academic performance resulting in no statistical association in the verbal (p value=0.25), non-verbal (p value=0.56) and over all general intelligence (0.54) with the timing of surgery and periopertative factors. **Conclusion:** All patients got below average scores on the intelligence test whether they were operated before or after 5 years old. Only weight and bypass time differ significantly in association with the timing of surgery. Though the vocabulary subtest had a significant association, the overall general post-operative cognitive outcome and other perioperative factors have no significant association whether patients underwent, early or late total Tetralogy of Fallot correction.

PHC.R.009.08

Scoring System for Predicting Mortality in Cyanotic Patients with Hypoxic Spell Admitted at the Philippine Heart Center

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Background: Hypoxic spell although most frequently seen in patients with TOF may also occur in infants or children with other congenital

heart disease especially if with severe pulmonary stenosis. Hypoxic spell is characterized by a period of uncontrollable crying, rapid and deep breathing (hyperpnea), deepening of cyanosis, convulsions and occasionally death. **Objective:** The main objective of the study was to develop a scoring system for predicting mortality in cyanotic patients with hypoxic spell brought to the Emergency Room. **Materials and Methods:** A prospective case control study was done on all patients brought to the PHC-ER because of hypoxic spell from July 1, 2009 to December 31, 2010. Records of cyanotic pediatric patients brought to the Emergency Room of the Philippine Heart Center were identified from the Emergency Room admission logbook. **Results:** A total of 109 patients were included in the study. Among the variables noted were demographic profiles, presence or absence of murmur and vital signs wherein hyperpnea was significantly correlated with patients who died. On the other hand laboratory parameters noted to be associated with mortality in hypoxic patients were ABG -pH, bicarbonate, CBC showing leukopenia, hemoglobin, hematocrit, prolonged PT, APTT, Mc Goons less than 1.4cm. The different variables were statistically treated using a Chi-square test independent *T*-test. Cut-off values were assigned to each of the 10 variables where a scoring system vas derived, 0 for those who survived and 1 for those who died. A score of ≥5 out of the total score of 10 was predictive of mortality and a score of <5 was predictive of survival. **Conclusion:** This study was able to develop a scoring system for predicting mortality among cyanotic patients with hypoxic spell brought to the Philippine Heart Center. The following variables were respiratory rate, pH, bicarbonate levels, WBC, hemoglobin, hematocrit, prolonged bleeding parameters and Me Goons Index were assigned a cut-off values where a scoring system was derived. A score of ≥5out of the total score of 10 was predictive of mortality and a score of ≤5 was predictive of increase chances for survival. **Recommendation:** Continuation of the same study may be done to recruit more subjects in order to validate the scoring system for predicting mortality among patients with hypoxic spell.

PHC.R.018.08

Clinical Outcomes and Electrocardiographic Score in Patients with Pulmonary Thromboembolism

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Background: Pulmonary Embolism (PE) produces electrocardiographic (ECG) abnormalities in proportion to the degree of pulmonary hypertension and pulmonary vascular obstruction. We hypothesized that an ECG score may be of use, in combination with clinical parameters and prediction, in identifying such patients at risk for in-hospital clinical adverse events. **Methods:** All adult patients admitted for at least 72 hours at the private and service wards of PHC between January 2005 and November 2009 with confirmed PE were studied. A clinical decision scoring system based on the Revised Geneva Score comprising of eight variables stratified patients into high clinical probability or non-high clinical probability (low and intermediate) of PE. Electrocardiograms were obtained within 72 hours after suffering symptoms related to PE or onset of clinical deterioration after initial stabilization during admission. The ECG score was then calculated. Eligible patients were further subdivided into groups comprising of those with ECG score of 2:3 and those with score of <3. The information on the clinical outcomes were analyzed and compared among the four groups. **Results:** One-hundred patients were included in the study. Twenty-one patients (21%) died during the index confinement. The incidence of hemodynamic deterioration and major complications were also found to occur in 37% and 20% of patients, respectively. The incidence of hemodynamic deterioration exhibited significant differences between groups with low and high ECG scores (19% vs 47%, p=0.005). The incidence of in-hospital hemodynamic collapse and the necessity for treatment upgrade and catecholamine infusion were all significantly more frequent in patients with high ECG scores (11% vs. 30%, p=0.027; 17% vs. 38%, p=0.023; and 11% vs. 28%, p=0.039, respectively). The composite outcome of major complications did not reach statistical significance but recurrent thromboembolic events were noted to be significantly higher in patients with high ECG score (3% vs. 1710, p=0. 029). Mortality rate was also

increased among patients with high ECG score (11% vs. 27%, p=0.050). In the subgroup analysis, patients with high clinical probability and high ECG scores in combination have a significantly higher incidence of hemodynamic deterioration compared to other groups (p=0.018). There was also a similar tread for this group to have an increased rate of mortality and major complications, although the difference did not reach statistical significance in this study. **Conclusion:** The ECG-scoring system can be very useful in identifying patients at risk for developing clinical end points of mortality and hemodynamic deterioration among patients with low and high clinical probability of PE. Although the prognostic accuracy of the ECG score does not allow identification of all those who will develop adverse outcomes, it can provide an incremental role to the clinical stratification provided by the Revised Geneva Scoring.

PHC.R.019.08

Prevalence and Risk Factors for Aspirin Resistance among Filipinos with Coronary Artery Disease (CAD)

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Objectives: To determine the prevalence of aspirin resistance among Filipinos with stable Coronary Artery Disease and to determine factors contributing to its occurrence. **Main Outcome Measures:** Prevalence and clinical predictors of aspirin resistance using the point-of-care assay kit (VerifyNow Aspirin). Resistance was defined as aspirin resistance unit >550. **Results:** The overall prevalence of aspirin resistance was 20%. Among the risk factors analysed, only diabetes was significantly associated with aspirin resistance (29% vs. 15%; p=0.010). On multivariate analysis, diabetes was associated with greater odds of aspirin resistance (OR: 2.36, 95% CI: 1.22-4.54 p=0.010). On subgroup analysis of diabetics, no significant association was found between aspirin resistance and age, sex, body mass index, dyslipidemia, insulin use, and sugar control. **Conclusion:** The prevalence of aspirin resistance using the VerifyNow aspirin assay in Filipinos with stable CAD was 20%. This result was concordant with the prevalence rate reported by previous studies. Diabetes was associated with 2.36 greater odds of aspirin resistance.

PHC.R.020.08

GRACE versus TIMI Risk Scores for Risk Stratification in Filipino Patients with Acute Coronary Syndromes at the Philippine Heart Center

Helenne Joie M. Brown, MD; Joyce S. Jumangit, MD

Background: Management of acute coronary syndromes (ACS) should be guided by accurate estimation of patient risk for untoward outcomes. **Objective:** To compare the prognostic value of the Global Registry of Acute Cardiac Events risk score (GRACE RS) and the Thrombolysis in Myocardial Infarction risk score (TIMI RS) for in-hospital mortality, and mortality or myocardial infarction 30 days and 6 months after an acute coronary syndrome. **Methods:** The GRACE RS and TIMI RS of all patients admitted for ACS at the Philippine Heart Center from November 1, 2008 up to December 2009 were computed. The discriminatory abilities of the GRACE and TIMI risk scores for all-cause mortality during in-hospital admission, at 30 days and 6 months, and myocardial (re-) infarction 30 days and 6 months after hospital presentation for acute coronary syndrome were measured by the *T*-test. **Results:** A total of 587 patients who were admitted for acute coronary syndrome at the Philippine Heart Center from October 1, 2008 up to December 2009 were included in the study. 399 (68%) were males and 188 (32%) were females with a mean age of 61 ± 13 years. 88 patients (15%) had a diagnosis of unstable angina, 242 (41.2%) had a diagnosis of non-ST elevation myocardial infarction, and 257 (43.8%) had a diagnosis of ST elevation myocardial infarction. Both the GRACE and TIMI risk scores had a significant correlation with in-hospital mortality (p=0.0003 and 0.0005 respectively), re-infarction and mortality at 1 month and 6 months after hospital discharge from an acute coronary syndrome. However, the GRACE RS is more sensitive than the TIMI RS in predicting such outcomes. **Conclusion:** Both the GRACE and TIMI RS have prognostic value for in-hospital mortality and re-infarction and/or

mortality at 1 and 6 months follow-up among patients admitted for acute coronary syndrome. However, since the GRACE RS has been shown to have a better predictive value than the TIMI RS, we recommend its use in risk stratification of patients upon hospital presentation for acute coronary syndrome in order to identify those who will benefit more from myocardial revascularization.

PHC.R.025.08

Comparison of 2DE and RT3DE Derived AVIs as Predictors of LV Function and Exercise Capacity in Chronic MR

Ramon P. Canda, MD; Edwin S. Tucay, MD

Objective: Chronic severe MR among asymptomatic patients poses a dilemma in deciding for the optimum timing of surgical intervention. Current recommended parameters that are being monitored to institute surgical intervention appear inadequate md not sensitive enough in detecting changes in the clinical status of the patient. LV dysfunction in MR is occult and deceivingly unapparent with traditional 2DE derived ejection phase indices such as LV ejection fraction. The objective of this study is to determine the correlation of LAVI determined by 2DE and RT3DE in chronic severe MR with exercise functional capacity and LV systolic-diastolic function. Whichever LAVI is better correlated will be a predictor of the changes in the LV function and functional capacity. **Methods and Results:** Prospective cross-sectional study. Patients not more than 45 years old with mildly symptomatic or asymptomatic severe chronic MR and without prior invasive intervention were included. A total of 32 subjects underwent complete 2DE study, treadmill stress testing and RT3DE determination of LA volume. RT3DE LAVI in comparison with 2DE LAVI was significantly better correlated with LV EF (r = -0.45 vs. -0.27), LV end systolic dimension (r = 0.81 vs. 0.8), stroke volume (r = -0.70 vs. -0.5) and exercise functional capacity (r = -0.42 vs. -0.28). lo significant correlation between 2DE and RT3DE derived LAVIs was noted with LV diastolic function parameter E/Ea. Cut-off mean of RT3DE LAVI for normal stroke volume derived was 24 to 32 ml/m, **Conclusion:** RT3DE-derived LAVI when compared with 2D LAVI is a better predictor LV systolic function and functional capacity among patients with chronic severe MR. It has the advantage of early detection of LV dysfunction in chronic MR due to its sensitivity and thus guide decision making in optimal timing of surgery among asymptomatic patients with chronic severe MR.

PHC.R.027.08

Role of Plasma Fibrin D-Dimers in the Screening and Prognostication of Patients with Acute Aortic Dissection

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Background: Acute aortic dissection (AAD) is a catastrophic illness. Prompt clinical recognition and definitive diagnostic testing are essential in the management of patients. The aim of this study is to determine the role of plasma fibrin D-dimers in the screening and prognostication of patients with AAD. **Methods:** Plasma fibrin D-dimers were determined in 42 chest pain patients (32 men, and 10 women; age range of 61 (19-80 years old) suspected with AAD. A definite diagnosis of AAD was confirmed with CT aortogram, or MRI and surgical report. The WHO definition of MI was used in cases of acute myocardial infarction (AMI). Patients who did not have AAD or AMI were placed under the third group. **Results:** Comparison of D-dimers levels (ng/ml) between AMI (n=4), AAD (n=13) and non-AAD -non-AMI (n=25) showed a significant difference ($p<0.001$). When the patients were grouped into 4 namely AMI, AAD, aneurysm without acute dissection, and non-AMI-non-AAD, the D-dimer levels of the aneurysm group without acute dissection were also increased and there is a significant difference among the D-dimer levels of the 4 groups with a p of <0.01. Comparison of means between AAD versus aneurysm shows a significant difference at p of 0.015, AAD versus AMI at p of 0.002, and AAD versus non-AAD-non-AMI at p of 0.013. There was significant overlap of D-dimer levels among AAD, aneurysm without AD and non-AMI-non-AAD even though the mean values were statistically different. All values of AMI, AAD and aneurysm without acute dissection were above the upper

limit of normal which is 500 ng/ml. Cases of aneurysm with or without acute dissection were above 1100 ng/ ml. AMI cases were all below 2000 ng/ml. Non-AMI -non-AAD group had the widest overlapping range of D-dimer levels with the AAD group and at times were within normal limits. Of the 13 patients in the group with acute aortic dissection, one (7%) with a D-dimer level of 9,980 ng/ml died within 30 days. **Conclusion:** D-dimer levels are elevated in many conditions with acute chest pain such as acute myocardial infarction, non-AMI CAD such as unstable angina, pulmonary embolism, and aneurysms with or without radiographic evidence of dissection. Elevated D-dimers of around 1,100 ng/ml are more reflective of aneurysms with or without acute dissection than levels of 500ng/ml. Most patients with AAD are normotensive than hypertensive. As a screening tool, the universal cut-off point of <500 ng/ml is useful in ruling out acute aortic dissection in the emergency room setting. Patients with levels above the cut-off (>500 ng/ml) should be suspected for AAD and subsequent radiologic work-up is warranted to distinguish it from PE and to exclude concomitant AAD in AMI candidates for anticoagulation to prevent catastrophic consequences of such therapy. Highly elevated D-dimers cannot distinguish between AAD and other causes of chest pain (non-AAD non-AMI) and this should prompt more an urgent MRI or contrast-enhanced CT scan to initiate early and appropriate therapy.

PHC.R.028.08

Left Atrial Volume Index Compared to Left Ventricular Ejection Fraction as Predictor of Cardiovascular Events and Mortality in Patients with Stable Coronary Artery Disease

Narciso Thad S. Ciocson, MD; Edwin S. Tucay, MD

Objective: Among patients with stable coronary artery disease managed medically, we sought to determine the utility of left atrial volume index (LAVI) versus left ventricular ejection fraction (LVEF) cardiovascular events and mortality. **Background:** In patients with stable coronary artery disease, there has been no study yet on the utilization of LVEF compared to LAVI in predicting cardiovascular events and mortality. **Methods:** This is a prospective cohort study conducted at the Philippine Heart Center involving ambulatory patients with stable coronary artery disease. **Results:** After exclusion of 12 patients with atrial fibrillation, mitral stenosis, or greater than moderate mitral regurgitation, 77 subjects were suitable for analysis. Mean LAVI was 35 ± 14 ml/m_2, and mean LVEF was 56 ± 14. These results were not statistically significant when LAVI was compared with LVEF. Although a high LAVI (≥34 ml/$_2$) and low LVEF (≤45%) contributed to the hypothesis that it can predict heart failure hospitalization and mortality. **Conclusion:** The study showed no significant difference between LAVI compared to LVEF in predicting cardiovascular outcomes and mortality. A high LAVI predicted HF and mortality to same degree as low LVEF, though not statistically significant.

PHC.R.029.08

A Comparative Study on the Dose and Mode of Administration of Rocuronium During Cardiac Surgery Under Cardiopulmonary Bypass

Melissa V. Morala, MD; Adelina S. Lim, MD

Background: Studies regarding the pharmacokinetics of muscle relaxants for cardiopulmonary bypass (CPB) abound but are conflicting. The available dose regimen does not guarantee adequate muscle relaxation. **Objective:** To determine the optimum rocoronium dose and mode of administration to maintain an adequate degree of muscular relaxation during CPB among adult patients. **Methods:** Randomized Open Label Trial. Eighty (80) subjects were randomly assigned to four treatment groups. For Group A, intubating dose was given at 0.6 mg/kg and maintenance by infusion. For Group B, intubating dose was given at 0.6 mg/kg and maintenance by bolus. For Group C, intubating dose was given at 0.9 mg/kg and maintenance by infusion. For Group D, intubating dose was given at 0.9 mg/kg and maintenance by bolus. Maintenance dose was started when TOF count was >2. Onset and duration of action of the intubating dose and the total maintenance dose requirement were noted. All other aspects of anesthesia care followed the standard protocol. **Results and Discussion:** Subjects were homogenously distributed

according to age (p value 0.134), gender (p value 0.415), body mass index (p value 0.636), type of surgery (p value 0.191), and presence or absence of diabetes (p value 0.131) and hypertension (0.07). Rocuronium at 0.9mg/kg had faster onset (3.74 ± 2.99 min) compared to that given at 0.6mg/kg (6.28 ± 2.58 min). The two dosages did not differ in duration of action. Maintenance dose by bolus decreases the requirement to 2.64 ± 0.821 mcg/kg/min compared to that by infusion given at 3.09 ± 1.12 mcg/kg/min. **Recommendation:** Multicenter studies with serum determination of rocuronium during different phases of cardiopulmonary bypass will help standardize the dose regimen.

PHC.R.030.08

The Correlation of Multi-detector Computed Tomography Scan and Pulmonary Function Test in Quantifying Pulmonary Emphysema

Mary Grace B. Vargas, MD; Harold L. Tan, MD; Alfredo F. Villarosa, MD

Background: For the past years, studies were made in which the subjective grading of CT scan resulted in statistically significant correlation between visual scoring and other panel of standards in detecting emphysema. A study was conducted to correlate the degree of emphysema using a 40 slice MDCT scan and PFT, which is the "gold standard" in diagnosing COPD. Recent studies, addressed the capability of comp ted tomography scan to quantify pulmonary emphysema accurately. Subjective visual grading as well as objective measurements of attenuation values was gathered. **Objective:** To compare 3-D CT scan and CT visual scoring with PFT in quantifying emphysema. **Methods:** Thin slice non-contrast CT scans of the chest were obtained in 31 adults. A 3D reconstruction of the lungs was done in order to visualize and measure the extent of emphysema using the ratio of the emphysematous lung volume over the total lung volume and was then converted to percentage. A score of 1-4 was assigned. These values were compared to PFT. **Results:** Of the 31 subjects, 16 (51.6%) were diagnosed to have pulmonary emphysema by PFT and 14 (45.2%) were identified by CT scan. Low attenuation threshold of -910 HU has a better agreement with PFT with a kappa value of .28 ± 0.095 and p value of 0.002, as compared with low attenuation threshold of -900 HU and -950 HU with kappa values of 0.27 ± 0.089 and 0.145 ± 0.082, and p values of 0.002 and 0.076, respectively. **Conclusions:** This study shows that there is no strong evidence to conclude whether CT scan can be used as an alternative diagnostic tool in detecting, quantifying and in grading pulmonary emphysema due to its small sample size.

PHC.R.031.08

Factors Affecting Outcomes of Tricuspid Regurgitation after Operative Repair

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Background: Tricuspid valve surgery due to organic pathology of the tricuspid valve or secondary to left heart pathology remains a challenge with considerable recurrence rate of severe tricuspid regurgitation with repair and even annuloplasty (45% vs. 6%). This study sought to determine the incidence of tricuspid regurgitation and factors (surgical technique of the tricuspid valve, etiology and 2D parameters) of patients who underwent Tricuspid valve surgery at Philippine Heart Center. **Methods:** This is a prospective cohort study. All patients who underwent tricuspid valve surgery between 2005 and 2010 were recruited. Clinical data and baseline (preoperative), postoperative (within 3 months) and follow-up (6 months to 5 years) 2D echocardiography study data were collected. Univariate association between factors and progression or regression was analyzed using Independent T-test, one way Analysis variance and Chi-square test. Logistic regression was used to determine the independent effect of each factor to progression or recurrence of TR. **Results:** Between 2005 and 2010, a total 156 subjects underwent tricuspid valve surgery. Of these, 32 subjects had complete set of baseline, postoperative (within 3 months) and follow-up (6 months to 5 years) 2D echocardiography study. The TR lesion was categorized as mild (1[3.1%]), moderate (5[15.6%]) and severe (26[81.3%]). The mean age was 39.1 ± 11.51 years. Valve pathology were affected as follows MR (75%), MS (62.5%), AR (50%), AS (37.5%) and TS (28.1 %). The incidence of recurrence of severe

TR on post-op (within 3 months) and follow-up (6 months to 5 years) were 25% and 31.3% respectively. The TV technique used showed no association and difference in the development of recurrence of TR [TV annuloplasty (28.1%), Modified de Vega (9.4%), Bicuspidization (21.9%), De Vega (18.8%) and Repair (21.9 %)]. Based on the 2DED parameters, There was significant regression of LA, RV, RA, MV anulus, TV annulus and PAP from baseline to post-operative determination but on follow-up taken after 6 months to 1 year, there was recurrence of increase in RA and TV annulus. On further differentiation between (+) and (-) TR regression group, LA and TV annulus was significantly higher in the (+) TR recurrence group. **Conclusion:** The recurrence of TR was not affected by the surgical technique of the tricuspid valve. The presence of combination of valve lesions (Aortic stenosis, Mitral stenosis and Tricuspid stenosis) significantly contribute to the recurrence of TR as well was the increase in RA and TV annulus on 2DED determination.

PHC.R.032.08

Randomized Controlled Double Blind Trial of High Loading Dose of Clopidogrel 600mg versus the Conventional 300mg in Patients Undergoing Elective Percutaneous Coronary Intervention at the Philippine Heart Center

Kristine H. Bantala, MD; James Ho, MD; Joyce Jumangit, MD

Background: Aggressive anti-platelet therapy is needed in patients who underwent coronary angioplasty, hence the combination of aspirin and clopidogrel. A lot of studies were done internationally comparing conventional loading dose versus the higher loading dose, but we would like to test if their hypothesis would also apply to us Filipinos, in terms of decreased major adverse cardiovascular events and bleeding rates. **Objective:** To compare 30 days outcome of patients receiving 600mg versus 300mg Clopidogrel loading dose prior to PCI. The primary endpoints that were determined in each study patient were the occurrence of death, post-procedural myocardial infarction, stroke and target vessel revascularization. **Methods and Results:** A total of 115 patients scheduled to undergo percutaneous coronary intervention were randomized in a double blind fashion to a 600mg (n=58) or 300mg (n=57) loading regimen of clopidogrel given 4 to 6 hours before the procedure. Complete blood count, Prothrombin time, Partial prothrombin time, Creatine kinase MB and Troponin - I were measured at baseline; and CKMB and Troponin -I were repeated at 8 or 24 hours after intervention. The primary endpoints were the 30-day occurrence of death, myocardial infarction (MI), stroke or target vessel revascularization (PCI or CABG). The primary endpoint occurred in 51% of patients in the high loading dose versus 85% of those in the conventional loading dose group (OR 0.19, 95% Cl 0.08 to 0.46, P=0.000) and was due entirely to decreased periprocedural MI in the higher loading arm. Troponin-I was significantly higher in the 300mg arm (4.3%) compared to the 600mg arm (2.5%) with a p value 0.007. **Conclusion:** Pre-treatment with a 600mg loading dose of clopidogrel 4 to 6 hours before the procedure is safe compared with the conventional 300mg dose, it significantly reduced the primary composite endpoint in the higher loading arm. It has greater significance in terms of lower periprocedural MI in patients undergoing percutaneous coronary intervention given 600mg loading dose of clopidogrel. This study may support its routine use in elective coronary angioplasty, and may influence practice patterns here in the Philippines.

PHC.R.033.08

White Blood Cell Count and High Sensitivity C-reactive protein as Independent Predictors of Severity of Coronary Artery Stenosis and Clinical Outcomes in Patients with Acute Coronary Syndrome

Maribel C. Gonzales-Tanque, MD; Gilbert C. Vilela, MD

Background: Correlation of white blood cell count (WBC) and high sensitivity creactive protein (hs-CRP) level with coronary artery disease (CAD) and investigations of its utility as a prognostic indicator in patients with acute coronary syndrome (ACS) are consistent with current concept that atherosclerosis is an inflammatory disease. **Objectives:** This study was designed to determine the relationship of WBC count and hs-CRP level to the severity of coronary artery stenosis and clinical outcomes in patients with ACS. **Methods:** This is a

prospective cohort study. Eighty seven patients admitted for ACS were included. Relationship of baseline WBC count and hs-CRP level with the angiographic findings and clinical outcomes were evaluated. **Results:** Higher baseline WBC count was associated with the occurrence of new onset heart failure and arrhythmia (p =0.021 and 0.004 respectively). There was no statistically significant relationship between baseline WBC count and severity of coronary artery stenosis as well as hospital mortality (p = 0.586 and 0.090 respectively). An elevated hs-CRP level was strongly ly associated with the hospital mortality (p=0.0 23), however, its relationship to the severity of coronary artery stenosis and the occurrence of new onset heart failure and arrhythmia were not statistically significant. **Conclusion:** WBC count and hs-CRP level can be use as predictors of outcome in patients with ACS. An elevated WBC count was strongly associated with the occurrence of heart failure and arrhythmia while a higher hs-CRP level was significantly associated with hospital mortality in patients with ACS even after adjustment for the traditional risk factors like hypertension and diabetes. However, there was no statistically significant correlation between WBC count and hs-CRP level and degree of coronary artery stenosis.

PHC.R.034.08

The Correlation of Radiographic RDPA/ Tracheal Index with the tr jet in evaluation of Pulmonary Arterial Pressure Among Adult Patients with Atrial Septal Defect

Luz S. Macuha-Tiuseco, MD; Marvin S. Tamaña, MD

Background: It has been most interesting to observe the gradual acceptance both by radiologists and other clinical specialists the importance of the chest radiograph in deriving physiologic cardiopulmonary data. Cardiovascular diagnosis can sometimes be made by roentgenographic methods alone, however, it forms only a part of the complete patients' evaluation. To further explore the usefulness of chest radiograph in evaluating pressure changes, a study was conducted to correlate the right descending pulmonary/tracheal index with the pulmonary arterial pressure obtained by tricuspid regurgitant jet from 2D doppler echocardiography among adult patients with atrial septal defects. **Objectives:** To assess the utility of radiographic Right Descending Pulmonary Artery (RDPA)/Trachea1 Index in the estimation of pulmonary arterial pressure (PAP) in adult patients with atrial septal defects at the Philippine Heart Center in correlation with tricuspid regurgitant jet on 2-Dimensional echocardiography. **Methods:** Measurement of the diameter of the RDPA and trachea was made directly from the frontal chest radiographs. The ratio (RDPA/Tracheal index) was compared and correlated with echocardiographic quantification of pulmonary arterial pressure. To test for the reproducibility of the measurements and to assess inter-observer variability, another radiology resident was asked to make an independent measurement. The assigned normal value for the RDPA/Tracheal index was 1.0. The RDPA/Tracheal index of >1.0 was declared to have pulmonary hypertension. **Results:** Out of 156 subjects, 106 (68%) have pulmonary arterial hypertension of varying severity and 50 (32%) have normal pulmonary arterial pressure obtained from 2D echo. Among the selected subjects, 106 (68%) turned out to have an RDPA Tracheal index of more than 1 and these correlated well with the systolic PA pressure by TRjet on 2D echo. Sensitivity was noted to be 99.1%. However, 38 of the subjects demonstrated poor correlation of RDPA/Tracheal index with that of the systolic PA pressure. Only 11 subjects with normal PA pressure showed direct correlation with the RDPA/Tracheal index of one (1) giving a specificity of 22.4%. The positive predictive value (PPV) and negative predictive value (NPV) of the radiographic RDPA Tracheal index in predicting presence or absence of pulmonary arterial hypertension were 13.6 and 71.7% respectively. The kappa coefficient was 0.71. **Conclusion:** Our study shows that radiographic RDPA/Tracheal index is far more sensitive than specific in estimating pulmonary arterial pressure on chest radiographs among adult patients with atrial septal defects. In patients with atrial septal defects, RDPA/Tracheal index can be used to screen patients for pulmonary hypertension, but echocardiography is still required for more accurate determination of pulmonary arterial pressure.

PHC.R.035.08

Prognostic Value of Exercise Treadmill Test Thallium-201 (ETT TI-201) Myocardial Perfusion Scan Using Single Photon Emission Computed Tomography (MPS-SPECT) in Asymptomatic Patients after Percutaneous Coronary Intervention (PCI)

Leonor L Mendoza-Bernabe, MD; Jerry M. Obaldo, MD

This cohort study aimed to evaluate the prognostic value of exercise Tl-201 gated MPS-SPECT in predicting major adverse cardiovascular events (MACE) in coronary artery disease patients who underwent percutaneous coronary intervention (PCI). **Methods and Results:** The population consisted of 42 post-PCI patients who underwent exercise TI-201 MPS-SPECT that were followed up 3-6 months after the imaging. The following MACE were observed, acute coronary syndrome (n = 8), repeat PCI (n = 3) and coronary bypass grafting (n=2). Twelve subjects had normal MPS findings, none of which had MACE during the follow up period. Twenty-two had reversible defects (7 with MACE) and 8 had irreversible defects (6 with MACE). Cut-off values for the following quantitative parameters were obtained using receiver operating characteristic curve analysis and corresponding relative risks (RR) for developing MACE were as follows: Left ventricular end diastolic volume (LVEDV) >90 ml, RR= 2.0 (95% Cl of 0.74-5.62, P value= 0.14); Left ventricular end systolic volume (LVESV) >35 ml, RR= 2.0 (95% Cl of 0.74-5.62, p value= 0.14); Left ventricular ejection fraction (LVEF) < 55%, RR= 2.0 (95% Cl of 0.76-4.95, p value=0.16); transient ischemic dilatation stress-to-rest LV volume ratio (TID) 2: 0.9, RR= 0.86 (95% Cl of 0.17-4.52, p value = 0.83); and lung to heart tracer activity ratio (LHR) 2: 0.3, RR = 2.0 (95% Cl of 0.60-5.71, p value = 0.31). **Conclusion:** Our limited data show that the absence of perfusion defects on TI-20l MPS-SPECT is associated with good prognosis in post-PCI patients within 3 months. Quantitative SPECT parameters such as LHR, LVEF, LVEDV may potentially identify patients who are at risk for developing MACE in the short term.

PHC.R.036.08

Application of the American College of Cardiology Foundation/American Society of Nuclear Cardiology Appropriateness Criteria for Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging in Philippine Heart Center

Belinda R. Dancel-San Juan, MD; Jerry M. Obaldo, MD

Objective: Myocardial perfusion imaging studies play an important role in the diagnosis and prognostic assessment of patients with suspected or known coronary artery disease. This study determined the appropriateness of the indications for myocardial perfusion imaging of patients referred to the Division of Nuclear Medicine of the Philippine Heart Center. **Methods:** Clinical information and myocardial perfusion imaging findings of patients who underwent myocardial perfusion imaging from January 2008 to December 2009 were reviewed. The ACCFIASNC Appropriateness Criteria for SPECT Myocardial Perfusion Imaging was used to classify indications for referral. **Results:** A total of 700 patients with a mean age of 55 years old were included in the study. There were 504 patients (72%) in the appropriate category and majority of them had abnormal myocardial perfusion imaging results (70.2%). There is highly significant association between appropriateness category and myocardial perfusion imaging findings. Most of the referring physicians were cardiologists. There is no association between myocardial perfusion imaging results and specialty of referring physicians among appropriateness categories **Conclusion:** The ACCFIASNC Appropriateness Criteria for SPECT Myocardial Perfusion Imaging may serve as a guide for attending physicians in the management of their patients with suspected or known coronary artery disease.

PHC.R.038.08

Safety and Efficacy of Hypertonic Sodium Lactate compared with 6% Hydroxyethyl Starch in Patients during Cardiac Surgery

Philip S. Valencia, MD; Florian R. Nuevo, MD

Background: This study aims to show any difference on hemodynamic and fluid balance effect and demonstrate the safety of HSL compared to RES. Patient undergoing cardiac surgery frequently experienced hypovolemia. Intraoperative intravascular volume optimization in such patients could decrease post-op morbidity and reduce length of hospital stay. Maximizing CO through titrated perioperative volume expansion was associated with better improvement. However ideal fluid to be used in the perioperative period is still a point of debate. Patient having cardiac surgery often have reduced myocardial function that may not tolerate large volume of fluid for hemodynamic stabilization. In this situation small volume administration of fluid which has a larger volume expansion effect and removing extracellular fluid excess may be beneficial. Lactate based solution have been investigated for its cardiac effects. It improves cardiac efficiency during shock and has recently been shown that lactate deprivation during shock impairs heart metabolism. Lactate can be used as an energy substrate and resuscitative fluid in patients undergoing cardiac surgery. Hypertonic sodium lactate administration during and post cardiac surgery improved hemodynamic status both macro and microcirculation. Negative fluid balance was also higher. Administration of HLS during cardiac surgery was safe and well tolerated. **Methods:** Patients ages 45-75 who will undergo cardiac surgery were enrolled to the study. They were randomly selected and assigned to one of the two groups who will receive HSL or RES. Demographics and medical history were taken, hemodynamic data, laboratory parameters, arterial blood gas analysis, fluid balance, OR time and length of hospital stay were recorded. **Data Analysis:** Data were described using means, frequency counts and percentages. *T*-test for independent samples was used to determine difference between means while chi-square was used to determine association between discrete variables. For all tests, a 95% confidence level was considered significant. **Results:** Demographic data as well as hemodynamic data did not differ between the 2 groups. HSL group had a significantly higher lactate and CBG during intraoperative. Intraoperative urine output was significantly higher in HSL group than RES group. No adverse events were noted in both groups. **Conclusions:** This randomized controlled trial demonstrates the clinical safety and efficacy of HSL compared with RES 6% during cardiac surgery.

PHC.R.039.08

Effect of Nicorandil l0 - 20 mg on Coronary Events and Left Ventricular Ejection Fraction of Patients with Compensated Congestive Heart Failure

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Background: Studies have shown that the arterial and venous vasodilation and the nitrate -like property of nicorandil has benefit with regard to hemodynamic parameters and improvement of clinical outcome. There has been no published data on effect of nicorandil on left ventricular ejection fraction. **Methods:** The study evaluated the effect of Nicorandil 10-20 mg on coronary events and ejection fraction of patient with compensated congestive heart failure in Philippine Heart Center. The study group are patients with compensated congestive heart failure (CHF), that is patients with left ventricular ejection fraction equal to or less than 40%. Nicorandil (10-20 mg BID) was given for 6 months in addition to their standard medication for CHF (digitalis, diuretics and dilators) and repeat 2D echo was taken on the 24th week to evaluate whether change in ejection fraction occurred. The primary composite endpoints are coronary heart disease death, non-fatal myocardial infarction, or unplanned hospital admission for cardiac chestpain. **Results:** An increase in ejection fraction was noted both in 10 mg and 20 mg doses of Nicorandil but improvement on clinical outcome was not shown may be due to insufficient statistical power. **Conclusion:** Nicorandil would be a reasonable add on medication for patients with compensated congestive heart failure particularly in those who have left ventricular ejection fraction of 40% and below. The study is limited by its sample size, hence, insufficient statistical power. Further study using a larger population is recommended to be able to show if there is improvement on clinical outcome.

PHC.R.041.08

Correlation of Electrocardiogram and 2D-Echocardiography Derived Ejection Fraction with the Six-Minute Walk Test Derived Functional Capacity Among Hospitalized Post Acute Myocardial Infarction Patients

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Background: Left ventricular dysfunction (LVD) is the single most important predictor of mortality following myocardial infarction.[1] Krake demonstrated the use of electrocardiogram lead aVr (ECG) in the estimation of ejection fraction (EF) in patients with unstable angina and NSTEM.[2] For the first time, to our knowledge, the functional capacity (FC) significance of ECG derived EF in the estimation of EF has not yet established in any studies. Our hypothesis then is, the ECG can be used as a practical bedside tool with predictive value in post-MI patients with varying levels of LVD. **Objectives:** This study aims to determine the association of EF measured by ECG and by 2D-echocardiograph (2D-echo) with the FC assessed by the 6-minute walk test (6MWT) among post-MI patients who can tolerate walking on admission and prior to discharge. **Methods:** Post-MI patients during hospitalization and prior to discharge had EF determination derived from the ECG and 2D-Echo. A 6MWT was performed to determine the FC of the patients a soon as patients can tolerate walking and prior to discharge. The results of the 6MWT are then correlated with the ECG and 2D-Echo derived EF. **Conclusion:** This study showed that the ECG-derived EF significantly correlates with the 2D-echo derived EF and with the 6MWT derived in post-MI patients who were hospitalized for an average of 3 days.

PHC.R.042.08

Reduction of Left Ventricular Hypertrophy with Simvastatin in Hypertensive, Non-Dyslipidemic Patients

Marie Sylvie Easter T. Gunigundo, MD; Leandro C. Bongosia, MD; Gilbert Vilela, MD

Background: There have been scientific studies made that cardiac hypertrophy can have significant regression through the use of statins. However, these scientific evidences were only directly tested among animals. Human studies are lacking to support this claim. **Methods and Results:** The association between treatment with statins and regression of cardiac hypertrophy was investigated through an experimental single blinded study using 2D echocardiography in 80 hypertensive, non-dyslipidemic patients. The patients were divided in two groups, those receiving placebo (n=40) and those receiving Simvastatin 80 mg (n=40). There was a significant decrease in cardiac hypertrophy as evidenced by LVed, IVSed, LVPWed, LVM and LVMI. **Conclusions:** Treatment with statins was associated with a regression of cardiac hypertrophy in patients who are hypertensive and non-dyslipidemic. This demonstrates one of the many pleiotropic effects of statins.

PHC.R.044.08

Lactate Level as an Early Prognostic Marker of Major Adverse Events in Pediatric Open Heart Surgery

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Background: Elevated lactate levels are commonly encountered in patients after heart surgery secondary to lactic acid reproduction or lactic acidosis due to tissue hypoperfusion and hypoxia during the operation. It provides an important prognostic marker in critically ill patients. This study aims to utilize serial lactate level determinations in predicting major adverse events in children post open heart surgery. **Methods:** Sixty one (61) Pediatric patients who underwent open heart surgery from May to October 2009 were recruited to participate in this prospective cohort research. Blood lactate levels were determined at 4 observational periods: immediately post bypass, 6^{th}, 12^{th}, and 24^{th} after surgery. These levels were correlated with outcome (mortality, inotropic score, duration of intubation and ICU stay) and risk factors (bypass and cross clamp time, lowest temperature on bypass). Cut off level at each observational period was determined using ROC curve, Kappa coefficient, sensitivity, specificity and predictive value. **Results:** In this cohort study, mean age of the participants was 7.02 years old, 54% were males and 25 of whom underwent VSD closure.

Average bypass and cross clamp time of 120.88 and 81.24 minutes respectively. Lactate level post operatively correlated significantly with the different outcome measures. Post-operative lactate level had correlation on duration of cardiopulmonary bypass as the 6th hr determination was to the lowest temperature on bypass. Analysis of eovariance reported lactate post-op and 6th hour had significance differences between dead and alive patients. Trends toward association between 24th hour lactate and prolonged intubation as well as composite outcome and post op lactate were also established. The following cut off lactate levels of 2:6 post operatively, 2:4 at 6th hour, 2:2.5 at 12th hour, and 2:1 24th hour post operatively were reported through ROC curve and Kappa Coefficient.

PHC.R.045.08

Perioperative Outcome after Saphenous Vein Harvest: Endoscopic vs Open Technique

Redentor B. Juan, MD; Ronnie Cacas, MD

Background: The saphenous vein the conduit mostly used in coronary artery bypass grafting. The vein can be harvested either by endoscopic or by open technique. The purpose of this study was to compare endoscopic vein harvest vs the standard open technique. **Methods:** This is a prospective cohort study in which a total of 231 patients, 175 are in the open technique and 56 are in the EVH group. The occurrence of post-operative complication in the harvest site was compared between the 2 groups **Results:** There were no significant difference between the 2 groups when the occurrence of post-operative wound complication was compared. In the open technique group, 74.2% developed ecchymosis compared to 83.9% in the EVH group with a p-0.151. Hematoma formation was 9 in the open group and ‘2 in the EVH group which accounts for 5.14% and 3.57% respectively, (p-l.000). Wound infection was higher in the open technique group with a 6.85% compared to 3.56% in the EVH group. (p-0.527). There was 1 or (0.57%) wound dehiscence in the open technique group and none in the EVH group. The overall outcome in the occurrence of complication the 2 groups was 48 (85.71 %) in the EVH group and 135 (77.14%) in the open technique group with a p-value of 0.190. **Conclusion:** There were no significant difference in the occurrence of post-operative wound complication between the 2 groups.

PHC.R.050.08

Early Outcome of Off-pump vs. On-pump in Patients with Multi-vessel Coronary Artery Disease in Philippine Heart Center

Ronald Winardi Kartika, MD; Lorenzo Carino Rommel.MD

Background: Early survival in off-pump coronary artery bypass (OPCAB) patients is reported to be as good as that of conventional coronary artery bypass grafting (CABG). However, it remains unknown whether midterm cardiac outcome after off-pump surgery is similar to that for the on-pump procedure. **Methods:** We enrolled consecutive patients admitted for coronary artery bypass grafting surgery. We divided them into two: those who underwent OPCAB and those who underwent conventional CABG. We followed them up during the hospital stay and observed for the occurrence of outcomes. **Results:** One hundred forty OPCAB patients (57.73+9.86y) were compared to a case matched contemporary group of CABG patients (58.63+8.96y). In-hospital and midterm outcome data are presented. Follow-up was 90% complete. The mean number of distal anastomoses per patient was 1.9 (0.8) and 2.4 (1.0) in the OPCAB and CABG group, respectively. Grafting according to treatment plan was 100% in both groups .Duration of mechanical ventilation, ICU stay and hospital stay were shorter in the OPCAB group. The incidence of atrial fibrillation was similar. There were no differences in in-hospital complications. **Conclusion:** OPCAB surgery is a safe and reproducible technique, yielding short-and midterm outcomes comparable to conventional CABG.

PHC.R.051.08

Predictors of Respiratory Failure After Cardiac Surgery

Ryan R. Evangelista, MD; Maria Paz B. Mateo MD; Fernando G. Ayuyao MD

Respiratory failure is an important and morbid complication following cardiac surgery.

It has a high mortality and can lead to prolonged hospital stay and added financial burden. Previous studies have identified different potential risk factors to the development of respiratory failure post cardiac surgery. However, those studies dealt mainly with post CABG patients. This study was done to analyzed the incidence of respiratory failure post cardiac surgery and identify risk factors associated with the development of respiratory failure. We analyzed 100 patients from the medical records of the Philippine Heart Center from June-December, 2009 who underwent cardiac surgery. Patients who develop respiratory failure were compared to those who did not develop respiratory failure. The Incidence of respiratory failure was 14%. The highest incidence of respiratory failure was seen among patients who underwent combined CABG/Valve surgery. On multivariate analysis: Renal failure, Ejection fraction of <30% and combined CABG/Valve surgery were identified as independent predictors for the development of respiratory failure. This study showed that respiratory failure is a common and serious complication post cardiac surgery and it identified risk factors that will enable physicians to properly identify high risk patients

PHC.R.052.08

Adaptive support Ventilation for fast Tracheal Extubation after Cardiac Surgery

Polly R. Domingo, MD, Aileen Guzman-Banzon, MD; William Del Poso, MD; Fernando G. Ayuyao, MD

Background: Rapid tracheal extubation is a major component of recovery post operatively thus many different strategies have been proposed to reduce the duration of mechanical ventilator after surgery, However specific ventilator strategies aimed in accelerating respiratory weaning after cardiac surgery have received little attention. Adaptive support ventilation (ASV) is a microprocessor controlled mode of ventilation that maintains an operator preset minimum minute ventilation that is independent of the patient's activity ASV recognizes spontaneous respiratory activity and automatically switches the patient between mandatory pressure-controlled breaths and spontaneous pressure-supported breaths. Previous studies have shown that ventilation in tested efficiency, safety, and adaptability in patients undergoing general anesthesia. We conducted a randomized control trial to determine whether weaning from ASV results in a shorter time to extubation in comparison with Tpiece weaning after elective cardiac surgery. **Methods:** Patients were randomly assigned to ASV or Tpiece weaning after elective cardiac surgery. Respiratory parameters were recorded pre and during weaning. The primary outcome measured were duration of weaning and failure of extubation. Secondary outcomes measured were duration of mechanical ventilation, associated complications, and length of ICU and hospital stay. **Results:** Twenty eight patients completed the study. In the pre-weaning and weaning respiratory parameters significant difference was noted on elevated heart rate, arterial oxygenation and PIF ratio, however in multiple regression analysis with a *p*-value computed at 0.308, adjusting for the heterogeneity for each variable it was found out that there was no significant difference between the two treatment arms. There were also no differences between groups in the duration of weaning, length of tracheal intubation, ICU and hospital stay. Moreover no patient from both arms of the study required reintubation. Complications that documented were ventilator associated pneumonia (V AP) and pneumothorax on ASV and T PIECE respectively **Conclusions:** In our study it showed that ASV was comparable to Tpiece, given that there was no significant difference in the total duration of weaning, total length of intubation, and no incidence of reintubation noted in both study arms.

PHC.R.054.08

Prevalence of Late onset Asthma among Elderly Patients

Maria Elizabeth P. Mendoza, MD; Maria Paz Mateo, MD

Asthma occurs more frequently in the elderly than is usually appreciated and may therefore be underdiagnosed and untreated. Although several studies report the characteristics of older patients with asthma, few studies have described patients with asthma after age 60 years. Despite the worsening national trends for asthma for the past 25 years, bronchial asthma in the elderly

has not received as much attention as asthma among children and adult, partly because asthma is difficult to distinguish from chronic obstructive pulmonary disease and congestive heart failure in older age. However recent studies have indicated that asthma is not uncommon condition among the elderly. In the U.S., prevalence of asthma among the elderly range between 4% and 10%. This study will determined the prevalence of late onset asthma in one community and identify other related risk factors associated with it. The diagnosis of asthma will be based on using a respiratory written questionnaires and portable spirogram.

PHC.R.055.08

Pre-Operative Pulmonary Risk Assessment of Pulmonary Arterial Hypertension Patients undergoing Cardiac Surgery

Christopher P. Cortes, MD; Maria Paz B. Mateo, MD

Pulmonary arterial hypertension (PAH) is a disease of the pulmvonary vasculature that is characterized by a progressive increase in pulmonary vascular resistance (PVR) and pulmonary artery pressure (PAP) which results into the development of right ventricular (RV) failure, inadequate oxygenation, and ultimately death. Thus, preoperative risk assessment and successful management of these patients undergoing surgery involves an understanding of the pathophysiology of the disease, analysis of pre-operative and operative risk factors, intraoperative management, and early recognition and treatment of postoperative complications increased morbidity and mortality in patients with PAH are mainly secondary to RV failure, arrhythmias, postoperative hypoxemia, and myocardial ischemia.

PHC.R.056.08

Relationship of Body Mass Index and Related Anthropometric Measurements on the Image Quality of Thallium-201 and Technetium-99m Sestamibi Myocardial Perfusion Imaging

Raniel Joseph F. Bautista, MD; Jerry M. Obaldo, MD

Objective: The aim of this study is to determine the relationship of BMI and related anthropometric measurements on the image quality of Thallium-201 and Technetium- 99m Sestamibi myocardial perfusion imaging. **Methods:** A total of 163 patients (40 males and 59 females) who underwent myocardial perfusion scintigraphy [99 thallium -201]; 64 technetium -99m sestamibi (38 males and 26 females); mean ages 58±11 for thallium-201 patients and 56±15 for technetium- 99m patients] from March 1, 2009 to October 31, 2010 were analyzed. The effects of gender, body mass index (BMI), anthropometric measurements, and possible confounding variables on the image quality of the myocardial perfusion scans were evaluated visually and quantitatively. Visual analysis of the image quality of all scintigraphic images was performed twice and on different occasions by an experienced physician blinded with regard to the patients' baseline characteristics. Percentage error and intra-observer variability was measured. Quantitative parameter used in the assessment of image quality was the heart-to-lung ratio (HLR). Regression analysis was done to determine the association of HLR with BMI and myocardial tracer uptake.Roe curves were generated to establish BMI and HLR cut-off points at which the deterioration of image quality of both thallium-201 and technetium -99m sestamibi myocardial perfusion scans start to become apparent. **Results:** There was a good agreement between the first and second assessments made on the image quality of the scans (5% error; k 0.77 for thallium-201 and 2% error; k 0.94 for technetium-99m Sestamibi). Gender alone was not a significant factor affecting the image quality of thallium-201 (p 0.063) and technetium- 99m (p 0.291) scans. BMI, weight, abdominal girth, and chest circumference correlated significantly with HLR (thallium- 201 p<0.00l; technetium -99m sestamibi p 0.012-0.048). There were no significant correlation attributable to height, breast cup size, history of smoking, and the level of exercise achieved (p>0.05). Increasing BMI was significantly associated with visually poorer images in the thalium-201 MPS group (p 0.003) but not for the technetium-99m MPS group (p 0. 065). Increasing BMI was also associated with decrease HLR and myocardial tracer uptake for both tracers (p<0.001). ROe curves revealed BMI cut-off points of 28 (tl-201 k 0.442±0.094 p 0.000; tc-99m sestamibi 0.346±0.122 p 0.004) for both procedures and HLR cut-off values of 3.0 for

tl-201 (k -0.071 ± 0.067 p 0.295) and 2.5 for tc-99m sestamibi (kO.013±0.122p 0.875). **Conclusion:** The image quality of thallium-201 scans significantly begins to deteriorate at a BMI of 28 and at a HLR of 3.0. At this level, it was associated with reduced count density in the myocardium (:S 6000 counts) that translates to visually apparent poor images. On the other hand, image quality of technetium-99m sestamibi scans also tends to deteriorate similarly at a BMI of 28. However, in contrast to thallium -201, the relatively lower HLR cut-off of 2.5 suggests that the countdensity in the myocardium remains high (2: 9000 counts) at this BMI cut-off rendering the image quality to be still satisfactory for subjective assessment.

PHC.R.057.08

Prolonged Mechanical Ventilation Among Children with Congenital Heart Disease Undergoing Cardiac Surgery in the Philippine Heart Center: a Risk Factors Analysis

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Background: Prolonged mechanical ventilation is necessary to some children after cardiac surgery. However, this increase the risk of associated postoperative morbidity and mortality, prolonged the hospital stay. This study was performed to determine the different risk factors for prolonged mechanical ventilation among children with congenital heart diseases undergoing cardiac surgery. **Methods:** Cohort study in pediatric patients who underwent cardiac surgery for congenital heart disease. Patients who were intubated upon transfer to recovery room were included in the study. Subjects were classified into two groups according to the duration of mechanical ventilation: prolonged mechanical ventilation (PMV) group (≥72 hours) and non-PMV group (<72 hours). **Results:** A total of 105 patients were included in this study. Thirty patients (28.57%) required prolonged mechanical ventilation for amedian of 3 days or 72 hours compared to 75 patients who were extubated within less than 3 days or less than 72 hours. Hypoxemia and elevated hematocrit with mean of 51.76 and 0.49 respectively, increases the likelihood for need of prolonged respiratory support. Prolonged by passtime and palliative procedure were significantly associated with prolonged mechanical ventilation. Postoperatively, there was significant improvement of arterial oxygen with mean of 138.80 ($p<0.001$). White blood count has mean of 15.24 (p 0.008) while there was significant numbers of patients with post-operative cumulative positive fluid balance (p <0.001) who requires prolonged mechanical ventilation. **Conclusion:** The present results suggest that preoperative arterial oxygen and hematocrit, Intra-operative cardiopulmonary bypass time and indication for emergency procedure and postoperative arterial arterial oxygen and white blood cell are risk factors for prolonged mechanical ventilation among children with congenital heart disease undergoing cardiac surgery.

PHC.R.058.08

Outcome of Pediatric Patients with Ventricular Septal Defect (VSD) Associated with Aortic Regurgitation (AR) Who underwent Surgical Closure of VSD at the Philippine Heart Centerin 2007-2008

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Background: Ventricular septal defect (VSD) is the most common cardiac malformation, if bicuspid aortic valve is excluded. Aortic regurgitation develops in about 5% of all ventricular septal defects. Patients can develop aortic valve regurgitation due to the prolapse of the adjacent aortic valve leaflet caused by Venturi forces associated with the left-to-right flow across the defect. The risk of aortic valve prolapse increases with increasing defect size. This study was done to determine the outcome of the aortic regurgitation in pediatric patients with VSD associated with AR who underwent surgical closure of VSD. **Methods:** We reviewed the records and echocardiogram of 35 pediatric patients who underwent surgical closure of VSD at the Philippine Heart Center during the period January 2007 to September 2008. **Results:** Fifty-one (51) percent of the patients are males and 49% are females. Majority of the patients in both sexes belong to the 11 to 14 years age group. There is an almost equal frequency of patients with VSD, AR with the perimembranous and subpulmnic type of VSD. After surgical

correction, it was noted that 11.4% of the subjects had decreased regurgitant fraction; 65.7% had decreased LVEDV; 28.5% had decreased LVESV; that 11.4% had increased FS; that 68.5% had decreased LVESD; that 80% had decreased LVEDD; and that 51.4% had increased EF. The results simply that there was improvement in the LV measurements and function as well as improvement in the AR as shown by decreased RF in the table. The decrease in the left ventricular end systolic and diastolic volumes was in accordance with the decrease in the LV end-systolic and end-diastolic diameters. **Conclusion:** It can then be concluded from the study that RF, LVEDD, LVESD, LVEDV, and LVESV had improved after surgical closure of the VSD. On the other hand, the two other variables, i.e., FS and EF had no sufficient evidence to support that these parameters improve after the intervention.

PHC.R.059.08

Association of Pulmonary Arterial Pressure, Oxygen Levels and Cardiac Output Among Children with Persistent Pulmonary Arterial Hypertension After Surgery: a 2-year follow-up

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Background: It is believed that surgical correction of the shunt aborts the progression of the pulmonary hypertension secondary to flow (dynamic PAH). However the pulmonary arterioles at that time may have undergone significant thickening after 2 years old and may be irreversible despite surgical correction. The drop in pulmonary arterial pressure (PAP) after surgical correction has been evaluated to be with in 6 months to 1 year after surgery. Some patients however comeback after 2-5 years after surgery with complaints of easy fatigability suggestive of progression of the pulmonary hypertension. This subset of patients, both in literature and in practice, has never been evaluated. This study is done to determine the changes in pulmonary arterial pressure in children with pulmonary arterial hypertension among children after corrective surgery and its correlation with cardiac output and oxygen levels. **Methods:** This is a cohort study. The following variables were gathered from the patients 18 year old and below before and after surgery at different intervals 1 month, 3 months, 6 months, 9 months, 12 months, 15 months, 18 months, 21 months and 24 months who underwent surgical correction. Variables were as follows: Pulmonary arterial pressure (PAP) based on pulmonary acceleration time (PAT), tricuspid regurgitation jet (TR jet) by 2D echo Doppler method; Pulmonary vascular resistance (PVR) by 2D echo; Cardiac output (CO) by 2D echo Simpson's; Level of p02 by ABG . **Results:** Pulmonary pressure monitoring by pulmonary acceleration time from baseline and every 3 months after surgery until 24 months showed a normalization of pulmonary arterial pressure at 12months. Likewise, pulmonary arterial pressure based on TR jet normalized at 12 months after surgery and thereafter. Pulmonary vascular resistance was also noted to reach normal value after 12 months and thereafter. There was an earlier normalization of p02 level at 1 month after surgery. Cardiac output normalized at 18 months after surgery. The pulmonary pressure changes over time based on PAT, TR jet and PVR were statistically significant with a p-value of <0.05. Likewise the changes in the p02 levels and cardiac output were statistically significant. **Conclusion:** In this study, pulmonary pressure and pulmonary vascular resistance normalized at 12 months after surgery. Level of oxygenation improved relatively earlier at 1 month after the surgical correction. Among the parameters, the cardiac output however was shown to have a late normalization at 18 months after surgery. Thus vigilant monitoring of patients must be observed even after the time when pulmonary arterial pressure is normal because cardiac output may have not reached its optimum levels yet.

PHC.R.060.08

Late Complications Following Tetralogy of Fallot Repair: a 5-10 year review

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Background: Residual lesions and other complications are expected in patients after full correction of Tetralogy of Fallot. Complications such as arrhythmias, pulmonary stenosis,

pulmonary insufficiency and ventricular septal defect leakage may remain stable after surgery, though, may progress and lead to right ventricular failure and dilatation, thus requiring long term follow-up and monitoring. **Methods:** A retrospective study involving chart review of 157 patients who underwent total correction of Tetralogy of Fallot from January 1, 1996 to December 31, 2005. Symptomatology, electrocardiographic and echocardiographic findings were collected and presented by frequency distribution. **Results:** In this cohort study, patient's mean age of 5.6 years, predominantly male and underwent right ventricular outflow reconstruction with an average of 7.1 years from surgery to inclusion in this study. Nine patients had VSD leakage, two patients developed severe pulmonary stenosis who underwent percutaneous pulmonary balloon valvuloplasty and infundibulectomy respectively and three patients had severe pulmonary regurgitation, two were reoperated for pulmonary valve replacement and one still awaits surgery. **Conclusion:** Long term follow up in patients after Tetralogy of Fallot correction is essential to monitor complications and provide intervention as need arises.

PHC.R.066.08

A Proposed Pediatric Risk Stratification Method (PediaRiSM) for Post-Operative Pulmonary Complication for Thoracic Surgery

Beverly D. Dela Cruz; Nerissa A. De Leon, MD

Objective: To determine the accuracy of a simple preoperative scoring system to predict postoperative complications among children undergoing cardiothoracic surgery. **Methods:** We retrospectively reviewed medical records of children aged 6 to 19 years old, who underwent thoracic surgery from June 2003 to 2008. Preoperative risk factors extracted include (age, gender and cardiothoracic anomalies), nutritional status, past medical history. Laboratory data include complete blood count, 2D-echocardiogram, chest radiograph, pulmonary function tests and blood gas analysis. **Results:** A total of 506 children, of which 330 (65.2%) developed postoperative complications while 176 (34.8%) with none. Atelectasis (25.6%) was the top complications. Among the clinical variables analyzed, only three variables were independently predictive of post-operative complications namely; FVC of < 80 (p=.030); blood pH of < 7.35 (p=.024) and white blood cell count of> 12 *T* per cubic mm (p=.001). ROC analysis derived the best minimum cut-off score of 11 points with a sensitivity of 88.8 % and specificity of 85.1 %, LR+ of 5.41. The overall accuracy of the scoring index was 81.6% [p=.002]. **Conclusion:** Pre-operative risk stratification using this scoring index is simple and rapid.

PHC.R.003.09

Comparative Study of the Effect of Sildenafil-treatment on Functional Capacity in Children Aged 7-18 years with Cardiac Shunt Anomalies and Severe Pulmonary Hypertension at 1, 3 and 6 months Therapy Using the 6 Minute Walk Test

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Background: One of the newer treatments for pulmonary hypertension is the use of phopshodiesterase inhibitors which have shown to be effective in lowering pulmonary arterial pressure in adult patients with PAH. This study investigates the effect of sildenafil treatment in the functional capacity of children with cardiac shun anomalies and severe pulmonary hypertension. **Methods:** This is a quasi experimental study done from May 2009 to March 2011, wherein 19 children diagnosed with cardiac shunt anomalies (ventricular septal defect, atrial septal defect, patent ductus arteriosus) with concomitant severe pulmonary hypertension were given sildenafil at a dose of 0.2-0.3mg/kg/dose every 8 hours. A baseline 6 minute walk test was done prior to treatment an repeated at 1 month, 3 months and 6 months of treatment. Oxygen saturation during these times was also determined. **Results:** Fourteen patients were able to complete the 6 month treatment. Mean 6 minute walk test improved by 13% from the baseline after 6 months of Sildenafil although only statistical trending was noted (p=0.09). Oxygen saturation did not improve in these patients. Among the different lesions, those with atrial septal defects had the greatest increase in 6 minute walk test distance in terms of

percentage increase from the baseline. There were no major side effects noted. **Conclusion:** There is a trend that the use of Sildenafil at a dose of 0.2-0.3mg/kg/dose has been shown to improve 6 minute walk test distance in patients with severe pulmonary hypertension. Trending was noted in this aspect although statistical significance was not met probably due to the scarcity of subjects. Although the dosage of Sildenafil given to the subjects fell within the acceptable therapeutic dose, we recommend giving higher dose of the drug which may provide a more statistically significant increase in the 6MWT distance.

PHC.R.004.09

Predictors of Arrhythmia in Children Undergoing Cardiac Surgery at the Philippine Heart Center

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Background: Arrhythmia is a frequently encountered problem post-operatively in patients undergoing cardiac surgery in adult; and children alike which poses additional resource burden and may contribute to unfavourable post-operative outcomes. Despite this, to date we have few data identifying the risk factors in the occurrence of arrhythmia post-operatively. **Methods:** Charts of patient aged 0 to 19 years old who underwent open heart surgery between January 2008 to June 2008 were included in the study. Following were noted: significant post-operative arrhythmia. The following parameters will be measured and noted: age during surgery, weight, sex, pre-operative rhythm strips for presence of arrhythmia, type of surgery, cyanotic or acyanotic heart disease, total By-pass time, total Cross-clamp time, electrolyte levels post-operatively (Na, Ca, K, Mg), blood sugar levels immediately post-op, PRBC transfusions, residual defect post-surgery, redo operations. The data will be presented as frequency and percent distribution, mean and standard deviation. Association of the different factors with occurrence of arrhythmia with T test, chi square test or Mann Whitney U Test. Two-tailed value of $p \leq 0.05$will be considered. **Results:** In the study, a total of 74 (4 males, 30 females) patients who underwent open heart surgery for congenital lesions were included. Patients age ranged from 0.16 years old to 18 years old. The mean weight was 12.54kg. Of the subjects, 13.5% developed arrhythmia post-operatively the most common of which is premature ventricular contraction and all the arrhythmias occured during the first 24 hours post-operatively. Of the pre-operative predictors, lower body weight and pre-op arrhythmia were associated with post-op arrhythmia ($p<0.05$) and cross clamp time at value of 0.002. **Conclusions:** Lower weight, pre-operative arrhythmia and longer cross clamp time are predictors of post-operative arrhythmia. The most common post-operative arrhythmia was premature ventricular contraction.

PHC.R.005.09

Profiles and Outcomes of Patients with Primary Cardiac Tumors at the Philippine Heart Center: a 10 Year Update

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Cardiac tumors are rare entities in the multitude of cardiac surgeries to date. Surgery for these lesions afford much symptomatic relief to the patient and is an integral part of the overall management. Initial studies made have described characteristics of these lesions both pathologically and clinically. Recent data may prove of value in further defining these tumors and the effect of surgery on morbidity and mortality. From January 1999 to December 2008, a total of 121 charts were retrieved from a total of 137 cases done; 114 cases were noted to be benign, myxomas accounting for 111 of them. Seven patient had malignant lesions were male up to myofibroblastic sarcomas (n=4), an angiosarcoma (n=I), a pleomorphic sarcoma (n=1) and a spindle cell tumor with sarcoma features and moderate atypia (n=1). Females out numbered males 3:1, with ages ranging from 10 months to 71 years old; eight patients were in the pediatric age group. The most common symptom was easy fatigability and shortness of breath occurring in two-thirds of all patients; majority of patients had NYHA FC II upon admission. Average LVEF was 66.83 ± for all patients and varying degrees of pericardial effusion were noted at preoperative echocardiography. Eighty-nine percent of lesions were in the LA, and majority were excised by direct LA approach in 78% of patients. Prolonged

bypass time and cross-clamp time were noted in 7 patients (6%), and were found to significantly different between groups, together with preoperative ejection fraction and tumor size through one-way ANOVA. Thirteen cases were done with other cardiac procedures (i.e. CABG, valve surgery) with one mortality due to prolonged time on bypass. Over-all morbidity rate was at 33.88% while mortality rate was 5.76%; length of postoperative stay was 10.45 days for all groups combined. Recurrence was observed in 3 patients and were noted to occur within 3 to 4 years from tumor excision. Long-term characteristics were not well documented, and thus long-term morbidity and mortality was not established. That past decade of cardiac surgery in our institution has shown an increase in the number of cardiac tumor cases with improved mortality rates after surgery. Surgery for cardiac myxomas is an essential procedure to relieve symptoms and affords acceptable mortality risks for this subgroup of patients. A combination of certain preoperative and intra-operative parameters have value in predicting post-operative morbidity and mortality. Improved technique and management has deer eased mortality and may be comparable to other surgical experiences. Comprehensive follow-up of patients is essential for determining long-term outcomes among cardiac tumor patients.

PHC.R.008.09

The Association of Glucose Levels in the Outcome of Pediatric Patients Undergoing Cardiac Surgery at the Philippine Heart Center

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Background: Hyperglycemia in pediatric patients has been associated with significant complications. Several studies have shown the effects of hyperglycemia as a marker for adverse outcome in post-operative pediatric cardiac patients. The main objective of this study is to determine the association of mean glucose levels in the immediate postoperative period during the first 24 to 72 hours on mortality and morbidity among pediatric patients following cardiac surgery. **Methods:** A retrospective cohort was performed among 109 pediatric patients, less than 19 years of age, who underwent cardiac surgery, from January 2009 to December 2009. Hospital records were reviewed. Baseline information were obtained from review of the chart. Patients were classified into risk categories according to the consensus-based method of risk adjustment for surgery for congenital heart disease (RACHS-l). Blood glucose levels were taken from the records from the first 24 and 72 hours postoperative period and operative data were obtained from the anesthesia and operating room records. **Result:** A total of five patients (4.6%) expired after surgery, while 18 patients had postoperative morbidities. Younger age higher RACH score, prolonged hospital stay and PICU stay; and longer bypass and cross clamp time were all associated with morbidity. Both mean glucose and peak lucose levels were associated with mortality. **Conclusion:** This study described the association of hyperglycemia with mortality after cardiac surgery. There were significant differences in the mean and peak glucose levels during the first 24 hours in terms of mortality.

PHC.R.009.09

The Effects of Leukocyte Filter Device in Preventing Respiratory and Myocardial Cell Injury in Acyanotic Pediatric Patients Undergoing Blood Transfusion During Open Heart Surgery

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Background: Majority of blood transfusion reactions is brought about by the presence of leukocyte in the blood products. It is already a practice to use either irradiated or leukocyte depleted blood products when transfusing blood products to avoid the deleterious effects brought about by leukocyte activation. Leukocyte filter devices offer a better alternative for transfusing leuko-reduced blood products to our patients. The study was conducted to determine the effects of using Leukocyte Filter Device on preventing respiratory and myocardial injury. **Methods:** A total of fifty-five (55) patients with Acyanotic Congenital Heart Disease who underwent open heart surgery were included in the study. Thirty -three (33) subjects were in the group without leukocyte filter device (LFD) and twenty-two

(22) subjects were in the group with leukocyte filter device. CBC, ABG and Troponin I were extracted at baseline and 30 minutes after the operation. Respiratory index was computed. **Results:** Majority of the cases are ventricular septal defect comprising 78% of the subject population followed by atrial septal defect comprising 14% of the subject population. In the group with no LFD used, there is a mean increase of the subject's respirator I index to 64, in contrast to an increase of only 23 in the mean respirator index of subjects using leukocyte filter device. (p-value = 0.172). The Troponin I of subjects without LFD had a mean increase of 4.54 ng/ml post-operatively compared to only 3.15 ng/ml in the LFD group. (p-value =0.055). The mean increase in the WBC count of the group without filter device was also higher at 13.11 x 109 compared to the LFD group at only 11.94 x 109• (-value =0.415). **Conclusion:** The use of leukocyte filter device during blood transfusion in pediatric acyanotic patients undergoing open heart surgery has beneficial effects by decreasing respiratory and myocardial cell injury exemplified by a lower respiratory index, Troponin I and WBC count post-operatively.

PHC.R.011.09

Risk Factors of Pleuro-pericardial Effusion Among Pediatric Patients Initially Presenting with Pleural effusion and Pericardial Effusion alone at Philippine Heart Center

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Objective: To determine the incidence and different factors leading to pleuropericardial effusion among pediatric patients with initial presentation of pleural effusion or pericardial effusion alone. **Methods:** A retrospective chart review of 0-19 years old pediatric patients admitted to our institution during a 9-year period (2000-2009), with diagnosis of either pleural effusion pericardial effusion and eventually developed pleuropericardial effusion as documented by echocardiogram, and chest radiograph was done. All demographic, clinical, radiographic, and laboratory data of these patients were collected and analyzed with the chi-square and Mann-Whitney test. A *p* value of 0.005 was considered significant. **Results:** Included were 179 patients, of which, 91 (51%) presented with pleural effusion and 88 (49%) had pericardial effusion. Seventy-three (41%) developed pleuropericardial effusion associated factors leading to pleuropericardial effusion were older age in presentation, initial presentation of pericardial effusion, (p = .000), and had Acquired Heart Disease, 54 (74%), and Tuberculosis, 33 (45%) (p-value=0.000). They have low normal PF ratio=373 (p= 0.020), low pleural fluid protein 3.5 g/dl (p=0.000), low pericardial fluid glucose 57 Mg/dl (p=0.000) and high pericardial fluid to serum LDH ratio, 3.61 (p=0.031). They have large sized, exudative, infectious in origin effusions (p-value = 0.000) and with increased incidence of surgical intervention despite medical treatment. A high serum and pericardial fluid LDH, high pericardial fluid WBC and lymphocytes with low pericardial protein although not significant, showed a trend towards predicting possibility of pleuropericardial effusion. Dyspnea, 26 (36%) and cough 23 (32%) were the most common symptoms noted. **Conclusion:** We found a high incidence of pleuropericardial effusions in pediatric patients with pericardial effusions associated with newly diagnosed acquired heart disease and tuberculosis. Low normal PF ratio, low pleural fluid protein, low pericardial fluid glucose and high pericardial fluid to serum LDH ratio, with large sized, exudative, infectious in origin effusions and a propensity for surgical interven1 on suggest a prognostic relationship between pleural and pericardial effusions to the development of pleuropericardial effusion. The majority of these pleuropericardial collections resolve with treatment of the underlying pleural and pericardial disease.

PHC.R.012.09

Comparison Between Adaptive Support Ventilation and Synchronized Intermittent Mandatory Ventilation in Weaning Post-CABG Patients: Philippine Heart Center Experience

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Background: In the Philippine Heart Center Recovery Room (PHC-RR), it has been common practice to utilize the SIMV (Synchronous

Intermittent Mandatory Ventilation) mode as the main tool during weaning from mechanical ventilation in the postoperative period. Adaptive Support Ventilation (ASV), a new ventilation mode, promises to provide a safe and effective startup to weaning, ease of operation for the user and adaptation to the different and variable characteristics and needs for the patient. The authors of this study attempts to prove that ASV is comparable to SIMV in terms of ease of weaning during the postoperative period. **Methods:** Twenty patients who underwent uneventful coronary artery bypass graft surgery were enrolled in the study. They were divided into two groups, the ASV group and the SIMV group. A protocol consisting of admission of the patients into the Recovery Room. Measurements for outcome were duration of mechanical ventilation, incidence of prolonged intubation/ mechanical ventilation and the number of reintubations after extubation. **Results:** A total of 26 patients were enrolled in the study. Fifteen patients completed the ASV group protocol, while 9 patients completed the SIMV group protocol. There were no significant differences in the preoperative demographic data of the patients or in the dosages of the administered drugs intra-operatively. The primary outcome variable of this study, the duration of mechanical ventilation, was shown to have no significant differences between the 2 groups. **Conclusion:** The trend shows that weaning of patients from mechanical ventilation using an ASV-based protocol is practicable and comparable to weaning based on SIMV. The evaluation of potential advantages of this novel ventilation mode on better patient outcome deserves further studies.

PHC.R.013.09

An Open Label Prospective Study Comparing Dexmedetomidine vs. Midazolam-Opioid Combination for Procedural Sedation of Pediatric Cardiac Patients

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Background: Procedural sedation, particularly in the catheterization laboratory, echocardiography units, and PICU for pediatric cardiac patients is a challenge, to render the pediatric patients immobile while the procedure is ongoing. Procedural sedation without the loss of airway in on-intubated patients requires the use of drugs which can effect a loss of consciousness yet maintain good spontaneous breathing and stable vital signs appropriate for age. **Objective:** To compare the efficacy for sedation and the clinical safety of dexmedetomidine versus the midazolam/opioid combination as a procedural sedation regiment for pediatric cardiac patients undergoing noninvasive or invasive therapeutic procedures or diagnostic work ups. **Methods:** This is an open label prospective cohort study. Patients were divided into two groups, first group was given dexmedetomidine and the second group was given midazolam with opioid (fentanyl or nalbuphine) combination. Dexmedetomidine was given initially with a loading dose (0.5 ug /kg patient's weight in kg) via perfusion pump as recommended by the manufacturer and dosages were titrated to effect based on the level of sedation desired, within the recommended dose range of 0.3 to 0.7 ug per kg per hour. Midazolam/opioid was given as intermittent IV bolus injection based on these dose: Midazolam at 0.2 mg/kg, Nalbuphine at 0.2 mg/kg or Fentanyl at 1-2 ug/kg. Succeeding top-up doses of the combined midazolam/opioid drug at 1 mg/kg of Midazolam and 0.2 mg/kg of Nalbuphine and 2 ug/kg of Fentanyl were based on the level of sedation desired. Adequacy of sedation during the procedure was based on the modified Ramsay sedation scale. **Results:** A total of twenty-two patients qualified for the study based on inclusion and exclusion criteria. The patients were homogenous in terms of the baseline characteristics and the premedications given. The systolic and diastolic blood pressures during the procedure and after the procedure were significantly lower in the dexmedetomidine group. There were no significant differences both in the heart rates and respiratory rates in both groups of patients. There is a significant difference in the sedation scores during the procedure and after the procedure, with the dexmedetomidine group having higher sedations scores in both observation periods. **Recommendation:** A randomized controlled study of the drug would be better suited once a BFAD approval of the pediatric use of the drug has been approved. Most of the studies of the drug have been limited to the adult population.

PHC.R.014.09

Comparison of Outcomes Among Diabetic Patients Undergoing Cardiac Surgery Using Insulin Infusion versus Insulin Bolus in Glucose Management

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Background: Perioperative hyperglycemia during on-pump cardiac surgery is associated with increased incidence of postoperative complications such as deep sternal wound infection, cardiac, renal, neurologic complications, prolonged intubation and longer stay in the intensive care unit, particularly among diabetic patients. Intraoperative glycemic control can be difficult to control because the stress response of cardiac surgery and cardiopulmonary bypass can induce profound hyperglycemia. Several studies concluded that intraoperative blood glucose control significantly reduces post operative morbidity and mortality in cardiac patients under cardiopulmonary bypass. **Measurements:** The primary outcome was a composite of death, stroke, coma, sternal wound infection, cardiac arrhythmias (new onset atrial fibrillation, heart block, cardiac arrest), prolonged ventilation. The secondary outcome were episodes hyperglycemia and hypoglycemia. **Methods:** Eighty-six diabetic patients undergoing on-pump cardiac surgery were enrolled. Patients were randomly assigned to receive insulin bolus or insulin infusion to maintain glucose levels between 80-120mg/dl. Insulin therapy was initiated according to modified Portland protocol. Intraoperative blood glucose level were measured hourly and titrated accordingly. Postoperative blood glucose levels were also determined and titrated until 12 hours **Results:** Twenty of 43 patients in the bolus group and 20 of 43 patients had an in hospital event. More deaths (0 vs 2, [P=0.494]) occurred in the infusion group. Mean glucose concentrations were lower in the bolus group than in the infusion group during induction of anesthesia (171.2±7.5 versus 158.4±89.81, [P=0.504]), on bypass 396.3 ± 80.33 vs 398.9±103.5, [P=0.896]), rewarming (399.1±81.14 vs 402.1±85.21, [P=0.844]), and post-bypass (360±101 vs 386.7±316, [P= 0.599] but were not statistically significant. Mean glucose concentration post-operatively taken upon arrival at K'U (290±93.87 vs. 291.28 ± 116.53, P=0.979]) were similar in both groups. The average 12 hours glucose concentrations were lowerin the infusion group but not significant (214.57 ±43.15 vs. 206.47 ± 62.58, [P=0.486]). The frequency of intra-operative hypoglycemia was low. Increased episodes of hyperglycemia was noted in both groups (41 vs 38, [P=0.433]). Postoperative hypoglycemia was low in both groups. Post-operative hyperglycemia was seen in 27 patients in bolus group and 25 patients in the infusion group. **Conclusions:** Intraoperative hyperglycemia under cardiopulmonary bypass is an independent risk factor for mortality and complications in diabetic patients. Although this pilot study showed no difference in clinical outcomes among the two study groups, the sample size was not large enough to allow for any definite conclusions or recommendations on the effect of glucose control on the outcomes of surgery. Insulin bolus can be used intra-operatively and post-operatively with similar outcome in the infusion group.

PHC.R.015.09

A Comparison of Patient-Controlled Analgesia (PCA) with Nurse-Administered Analgesia (NAA) in Post-Operative Pain Control Among Open Heart Surgery Patients at the Philippine Heart Center

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Background: Intravenous Patient Controlled Analgesia (PCA) was compared to a round the clock nurse administered intravenous analgesia regimen (NAA) to determine if the PCA was advantageous in terms of pain scores and satisfaction ratings among post cardiac surgery patients. **Methods:** Eighty patients, 22 to 76 years of age, undergoing cardiac surgery under the sternotomy approach were randomly assigned to receive Tramadol HCl either by PCA or by NAA for 24-hours after admission to the recovery room. Minimum and maximum doses were standardized. Pain intensity was tested four times a day and satisfaction ratings were obtained on the 24th hour after admission to the recovery room. **Results:** There was no difference in pain scores obtained between both groups (p >0.05) in spite of greater an algesic usage by

the PCA group (P = 0.000). Satisfaction ratings were higher among the PCA group. (p = 0.000). **Conclusions:** In using Tramadol HCl at 150 to 300mg per day, PCA and NAA methods are equally effective in treating post cardiac surgery pain. However, patients are significantly more satisfied with using the PCA pump.

PHC.R.017.09

Accuracy of Video-Assisted Pericardioscopy-guided Biopsy in the Etiologic Diagnosis of Pericardial Effusion

Marvin D. Martinez, MD; Ramon Ribu, MD; Samuel Andin, MD

Background: Pericardial effusion of different etiologies remains to be a clinical problem with a controversial clinical approach. It may be used by a myriad of conditions. Some etiologies of pericardial effusion may have poor prognosis, while others may have an unremarkable sequelae. Regardless of their expected course, accuracy and a speedy diagnosis is imperative. **Methods:** A total of 11 patients with confirmed pericardial effusion admitted at our institution from January 1, 2009 to October 31, 2011 were included in the study. These subjects underwent both the conventional anterior pericardial biopsy and the video-assisted pericardioscopy-guided (VAP) biopsy to evaluate the etiology of pericardial effusion. Results from both techniques were compared. **Results:** Anterior pericardial biopsy yield d 5 idiopathic, 5 Tuberculous, and 1 malignant pericardial effusion; whereas, video-assisted pericardioscopy-guided biopsy yielded 5 Tuberculous, 5 idiopathic and 1 malignant pericardial effusion. Comparing video-assisted pericardioscopy-guided biopsy with the anterior pericardial biopsy in determining Tuberculosis (chronic inflammation) as the etiology of pericardial effusion, the sensitivity is 100%, specificity-100%, PPV-l00%, NPV -100% with a Kappa of 1.00 ± -0.302, and p-value of 0.0004. The YAPs strongly agrees with anterior pericardial biopsy in determining tuberculous pericardial effusion. Comparing video-assisted pericardioscopy-guided biopsy versus Anterior pericardial biopsy in determining malignancy as the etiologic diagnosis for pericardial effusion, the sensitivity is 100%, Specificity-l00%, PPV-100%, NPV -10% with a Kappa of 1.00 ± -0.302, and p value of 0.0004. The YAPs strongly agrees with anterior pericardial biopsy in determining malignant pericardial effusion. **Conclusion:** This study conducted on 11 patients showed no significant differences in the diagnostic yield using video-assisted pericardial biopsy and standard anterior pericardial biopsy in the etiologic diagnosis of pericardial effusion. Recommendations for further study of this kind would be: 1) increased number of sample size and; 2) longer duration or period of study.

PHC.R.020.09

Predictor if Early Mortality and Morbidity in Mitral Valve Repair for Rheumatic Mitral Valve Disease: Philippine Heart Center Experience

Ronald Winardi Kartika, MD; Gerardo S. Manzo, MD

Background: Mitral repair is feasible for patients with degenerative or ischemic heart disease, however, the appropriateness of repair for rheumatic heart disease remains controversial. The aims of this study to evaluate the predictor of outcome of mitral valve repair at the Philippine Heart Center (PHC) from review of the clinical and echocardiographic record of all patient who underwent this procedure from January 1999 to December 2009. **Objective:** To determine predictors of early mortality and morbidity such as arrhythmias, stroke, renal failure, re-operation, prolonged intubation in patient who underwent mitral valve repair in rheumatic mitral valve disease. We follow-up the early outcome of mitral valve repair in population rheumatic mitral insufficiency regarding the complication and the mortality rate. **Conclusion:** In our experience, a variety of surgical repair techniques can be applied successfully to patients with rheumatic mitral valve disease. Early results obtained with mitral valve repair for rheumatic mitral valve disease were satisfactory. It is our recommendation that mitral valve repair be performed whenever possible in rheumatic heart disease.

PHC.R.021.09

Validation of Tidal Breathing Analysis in the Diagnose of Asthma Among Filipino Children Aged 1 Month – 6 Years

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Background: Asthma is a chronic inflammation disorder of the airways and is the most common chronic pediatric airway condition. Hence, an early diagnosis is of paramount importance so as not to delay proper treatment. However, establishing a diagnosis of asthma in this age group is hampered by a lack of objective assessment. For this reason there is a growing interest in the tidal breathing analysis, which is a non-invasive method of measuring airway and parenchymal lung function. **Objective:** The purpose of the study was to assess the accuracy of tidal breathing analysis in diagnosing asthma in Filipino children aged 1 month – 6 years as compared with the Philippine Consensus for Asthma as a reference standard. **Methods:** Lung function was measured and analysed using the tidal flow-volume loops (masterscreen Paed Jaeger Pediatric) in 119 sedated young children (55 males, 64 females; mean age 2.6 years) who are suspected of having asthma, before and 15 minutes after inhalation of nebulized salbutamol. The result of the tidal volume per kilogram (VT/kg) and the ratios of the time and volume until peak expiratory flow to the total expiratory time and volume, respectively (TPTEF/TE and VPEF/VE) were recorded. Reversibility after salbutamol inhalation was recorded. The 119 patients were determined to be asthmatic or non-asthmatic based on the Philippine Consensus algorithm for diagnosis of asthma where spirometry and peak flow meter is not feasible. **Results:** Of the 119 patients, there were 33 (27.73%) who showed reversibility during TBA as compared to those who showed no reversibility 86 (72.27%). Patients who were positive using the Philippine Consensus for Asthma were 58 (48.75%) while those who were not were 61 (51.25%). Results showed that the sensitivity of TBA was 36.2% and the specificity was 80.3%. The positive predictive value was 63 .6% and the negative predictive value was 57.0%. The Kappa score is 0.167 ± - 0.083. **Conclusion:** We conclude that the tidal breathing analysis is not reliable screening tool for children being suspected to have asthma due to its low sensitivity result. However, the tidal breathing analysis make a good validating device as shown by its high sensitivity score. Hence, along with a through history and physical findings, the tidal breathing analysis can be used as a confirmatory tool for children being suspected of having asthma.

PHC.R.022.09

Association of Dipyridamole-induced ST-Segment Depression with Myocardial Perfusion Scintigraphy Results and Incidence Major Adverse Cardiac Events (MACE)

Ferdinand L. Flores, MD; Jerry M. Obaldo, MD

Background: The purpose of this study was to determined the prevalence of significant ST-segment depression induced by dipyridamole administration during myocardial perfusion scan and its associations with the scan findings and incidence of MACE. **Methods:** This is a prospective cohort, involving 152 patients who underwent myocardial perfusion scintigraphy using dipyridamole. Presence of ST depression induced by dipyridamole was compute i. Subjects were followed-up for 1 year for occurrence of MACE. Presence of ST depression was associated with MPS results, and with the occurrence of MACE. **Results:** The mean age is 63 (± 11.7) years old, with male predominance. Fifty-six patients developed MACE and 1 mortality was observed. The prevalence of ST depression induced dipyridamole was .6%. Among those with MACE, 13 had ST segment depression. Presence of ST depression was significantly associated with MPS results (RR: 2.05 (95% CII.75, 2.45), p = 0.001), K = 0.146 ± 0.046. The mean SDS as well as the mean number of reversible segments of patients with ST depression was not statistically different from those without ST depression. There was no significant association between presence of ST depression and occurrence of MACE. **Conclusion:** ST segment depression post-dipyridamole administration occurs infrequently. It also does not have significant diagnostic and prognostic value in patients with CAD.

PHC.R.024.09

Comparison of the Functional Capacity and Quality of Life of Post-Operative Congenital Heart Disease Patients Who Underwent Cardiac Rehabilitation

Jose Melvin C. Cosep, MD; Jhuliet J. Balderas, MD; Ma. Ina D. Bunyi, MD

Objective: To compare the functional capacity and quality life of post-operative congenital heart disease patient who underwent cardiac rehab sessions. **Methods:** Post-operative congenital heart disease patients, ages 7 to 18 years old, underwent 12 cardiac rehab sessions. Subjects were monitored up to the 12^{th} session of the cardiac rehab. Baseline six minute walk test were done as well as after the 4^{th}, 8^{th} and 12^{th} sessions. O_2 saturation, heart rate, blood pressures, and respiratory rate were monitored and compared before and after each session. Results were labeled into before and after rehabilitation of 4^{th}, 8^{th} and 12^{th} Gr IUPS. **Results:** Exercise function of the patients who completed 8^{th} and 12^{th} sessions significantly improved compared with baseline, specifically the 6 minute walk test. Their perceptions of heart problems, treatment, perceived physical appearance, treatment anxiety, cognitive and communication problems were. **Conclusion:** Cardiac rehabilitation significantly improved the functional capacity of children with CHD specifically the 6 minute walk test. Patients scores significantly improved in the series of quality of life questionnaire.

PHC.R.036.09

A Cross-Sectional Study of Preoperative Cranial Ultrasound Findings Of Infants with Congenital Heart Disease

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Background: Cranial ultrasound is a safe and cost effective diagnostic tool which can be used to identify and study the incidence of central nervous system (CNS) malformations related to congenital heart diseases (CHD). The objectives of this study were to determine the utility of and document the possible associated findings. **Methods:** A cross-sectional population of sixty-six (66) patients was investigated. Cranial ultrasound was performed preoperatively with neurological evaluation to infants diagnosed with congenital heart disease. Findings were recorded, tabulated and compared. **Results:** Acquired data showed a total of 8 participants with aberrant cranial ultrasound findings. These anomalies include five (5) participants with ventriculomegaly, one (L) with hemorrhage, one (1) with cystic focus and another (1) with encephalomalacic changes. **Conclusion:** It may seem that performing cranial ultrasound played no role in preoperative screening of infants with CHD. Inadequate sample population and limited time played significant restricting factors to conclusively say that this particular modality is completely irrelevant and may be foregone as a valuable ancillary procedure.

PHC.R.039.09

Comparison of Clinical Outcomes of Dual Chamber versus Single Chamber Pacemakers Among Patients with High grade AV Block and Sick Sinus Syndrome: Philippine Heart Center Experience

Maria Christie Mendoza-Reyes, MD; Bele O. Carisma, MD

Background: Dual chamber pacing appears to be more physiologic by restoring atrioventricular synchrony and matching the ventricular pacing to sinus rate, thus with improvement of hemodynamic function. However, the clinical benefits of such pacing has been reviewed with conflicting results. Studies now report that dual chamber pacing does not confer superiority in the improvement of quality of life. This study will compare the clinical benefits by assessing the quality of life and functional capacity among patients with sick sinus syndrome and high grade AV block with single chamber versus the dual chamber pacemakers. **Methods:** Patients who are $\geq$ 19 years old who had permanent pacemaker insertion secondary to AV Block or sick sinus syndrome were included in the study. Functional class was assessed using 6 minute walk test and quality of life was assessed using a validated questionnaire. Baseline 6 minute walk test was done and Quality of Life Questionnaire was answered within a month from the time the pacemaker was implanted. Patients were

followed-up every 6 months but a repeat 6 minute walk test and Quality of life Questionnaire was done at 12th and 18th months. **Results:** The mean distance travelled by patients in both dual and single chamber pacemaker groups (315.3 ± 74.73 versus 384.25 ± 92.03, p= 0.94) is not statistically different at baseline and on follow-up (401.00 ± 83.95 versus 412.75 ± 74.67, p = 0.818). QOL scores were also not statistically significant. **Conclusion:** There is no difference between dual and single chamber pacemakers in terms of functional capacity and QOL in patients with SSS and high grade AV block.

PHC.R.040.09

Outcomes of STEMI Patients and Adherence to Recommendations on Door-to-Needle and Door-to-Balloon Time: a Philippine Heart Center Experience

Richie Gaye T. Fernandez-Limbungan, MD; James S. Ho, MD

Background: International guidelines have been published regarding the optimum time for revascularization (either through fibrinolysis or percutaneous coronary intervention) for ST elevation myocardial infarction patients seen at the emergency room (door-to-needle time of 60 minutes and door-to balloon time of 90 minutes). Data around the world have shown a relationship between adherence to guidelines and occurrence of morbidity and mortality among these patients. Local data from the Philippine Heart Center (PHC) is examined. This study aims to compare the outcomes of STEMI patients seen at PHC according to adherence to recommended door-to-needle and door-to-balloon time. **Methods:** This is a prospective cohort study involving patients who presented as ST elevation myocardial infarction without any fibrinolytic treatment done prior to ER consult. Information sheets were given out at the emergency room and the catheterization laboratory. The author, as well as the adult cardiology fellows and nurses assigned at the emergency room and cardiac catheterization lab, documented the specific events and procedures performed and the time it was done-patient's time of arrival at the ER or catheterization lab, time of ECG taking, time of transfer to and arrival at the catheterization lab, time when thrombolysis or percutaneous coronary intervention (PCI) was done. Outcomes were defined as in-hospital mortality, improvement of condition leading to discharge, or morbidities: life-threatening arrhythmia (ventricular tachycardia, ventricular fibrillation), hypotension, congestive heart failure, and others. Prolonged hospital stay due to complications like hospital-acquired infection and non-cardiac problems were not included. **Results:** A total of 94 patients underwent PCI; 26 adhered to the door-to-balloon time, while 68 did not. There was no significant difference in mortality and complications up to 72 hours post-procedure in both groups, but there was statistically significant difference in the length of hospital stay, with shorter hospital stay in the group that adhered to recommended door-to-balloon time. Subjects were few in the thrombolysis group, so no statistical analysis was done, but trend shows shorter hospital stay in the group that adhered to the recommended door-to-needle time, and with more procedures like PCI and CABG further done in the non-adherent group. **Conclusion:** This study showed that in majority of patients at the Philippine Heart Center who underwent emergency thrombolysis and PCI, the recommended door-to-needle and door-to-balloon time were not met. This has no effect on mortality and complications in all patient sub-groups, but resulted to a shorter hospital stay in those who adhered to the guidelines.

PHC.R.041.09b

Phase II Cardiac Rehabilitation for Quality of Life Improvement in Filipino Patients Who Underwent Coronary Artery Bypass Graft

Dave Anthony Padilla, MD; Edgardo Ebba Jr, MD; Eduardo Waine, MD; Anna Leano, Arthur King

Background: Cardiac rehabilitation is effective in decreasing all-cause mortality among patients who have Coronary Artery Disease. Equally important is the improvement of their quality of life and resumption of their role in society. The study aims to determine the effect of a formal Phase II trial on the quality of life of post Coronary Artery Bypass Graft (CABG) patients. **Methods:** All patients admitted at the Philippine Heart Center from March 1, 2010 to July 30, 2011 for CABG were enrolled. Seventy-one patients were randomized to either Phase I (35 patients) or Phase I and II (36 patients). Baseline

health-related quality of life measurement using the SF-36 was obtained. The same questionnaire was given at regular intervals to monitor improvement. **Results:** Twelve months after CABG, there was significant improvement among patients assigned to the Phase I in most parameters, except for pain. Among patients as signed to the Phase I, II, there was significant improvement on all parameters when compared to baseline. There was no significant difference though between Phase I and Phase I-II groups across time. **Conclusion:** Among Filipino patients who undergo Coronary Artery Bypass Graft, cardiac rehabilitation improves quality of life, but, undergoing an additional Phase II may not significantly increase the magnitude of improvement.

PHC.R.043.09

A Randomized Controlled Trial Comparing Adequacy of Anticoagulation Between Traditional INR Management versus Nomogram Based INR Management among Post Mechanical Valve Replacement Patients at the Philippine Heart Center

Bermillon S. Faderan, MD; Normita Manapat, MD

Background: At present, the adequacy of anticoagulation at the outpatient department of the Philippine Heart Center for post valve replacement patients is not known. The general objective of this study is to determine a more effective method of anticoagulation titration in patients with prosthetic mechanical heart valve in the Philippine Heart Center. The specific objectives are to determine the outcomes of anticoagulation among patients receiving traditional INR management and nomogram based INR management, to compare embolic and bleeding outcomes between the two methods of INR management and to determine anticoagulation control in the two methods of INR management. **Methods:** We randomly allocated post mechanical valve replacement patients who required warfarin either to the traditional or nomogram based INR management arm. The quality of oral anticoagulant management was evaluated by comparing the proportion of time that the international normalized ratio (INR) of patients receiving warfarin was within the target therapeutic range in both arms. The rates of thromboembolic and major hemorrhagic events were measured. **Results:** A total of 62 patients were enrolled with 31 patients randomized to each arm of the study. There were no bleeding or thrombotic complications observed in either study group. The INR of patients in the traditional INR management arm were within range 36.46 ± 27.91% of the time, while the INR of patients were within range 42.55±27.64% of the time in the nomogram INR management arm (p value= 0.391). There was no significance difference in the percentage of time INR values were within range between the traditional INR management arm and nomogram based INR management arm (p value= 0.96) in patients with target INR of 2.0-3.0. Among patients with target INR of 2.5-3.5, the percentage of time INR values were within range was higher in the nomogram based INR management arm (38.48 ± 27.82) than that in the traditional INR management arm (24.11±20.10) as but this difference did not reach statistical significance (p value= 0.059). Patients in the traditional INR management arm had a higher percentage of time INR values were below range (70.67±21.55) than patients in the nomogram based INR management arm (51.01 ± 29.52) which was statistically significant (p value= 0.017) **Conclusion:** There was no significant difference in the anticoagulation control between the traditional and nomogram based INR management arm.

PHC.R.044.09

Electrocardiogram Derive Ejection Fraction as Predictor for Clinical Outcome in Non-ST Segment Elevation Myocardial Infarction or Unstable Angina

Maria Johanna Matheu Jaluague, MD; Gilbert Vllela, MD

Background: A major challenge in the management of acute coronary syndrome (ACS) and heart failure is the accurate identification of those patients who have poor prognosis and who would therefore be most likely to benefit from intensive medical therapy and/or intervention. The electrocardiogram (ECG is a mainstay in the diagnosis of acute and chronic coronary syndromes and it provides information on prognosis depending on the type, location, and extent of injury. One of the most frequently used

factors for predicting survival in patients with systolic HF, after a myocardial injury such as after suffering an acute myocardial infarction, is a reduced left ventricular ejection fraction (LVEF). Patrick Krake demonstrated the use of electrocardiogram in the estimation of ejection fraction, but has not yet been validated in any of the studies, Demonstration of the possible relationship of electrocardiogram derived ejection fraction as computed using the formula of Patrick Krake, with the morbidity and mortality of patients developing ACS, might support the utility of electrocardiogram derived EF in prognosticating patients with ACS, being the most basic and cheapest among the diagnostic examinations for ACS. **Objective:** To determine association of ejection fraction measured by electrocardiogram, with the in hospital, 30 days, 6 month morbidity and mortality of patients admitted for ACS. **Methods:** Patients admitted for ACS were included in the study. Electrocardiographic ejection fraction was computed using the formula derived by Krake [EF = (AVR X 2.2 14) + (Age X 0.645]. The patients were then followed up in terms of morbidity and mortality from admission up to discharge then after 1 month then after 6 months. Ejection fraction by ECG was then correlated with the morbidity and mortality of the patients} in terms of days of hospital stay) both in the CCU/ICU and in the regular room number of medications and extra procedures for heart failure such as temporary pacemaker insertion, percutaneous coronary intervention coronary artery bypass grafting an intra-aortic balloon pump insertion.

PHC.R.048.09

Factors Affecting the Resolution of Chronic Moderate Ischemic Mitral Regurgitation in Patients undergoing Coronary Artery Bypass Graft without undergoing Mitral Valve Annuloplasty

Karl Fernand R. Franco, MD; Edwin Tucay, MD

Background: Ischemic mitral regurgitation (IMR) is a threatening and a progressive disease which is usually insidious in nature. It is frequently associated with and a complication of coronary artery disease (CAD). Coronary Artery Bypass Graft (CABG) surgery has long been recognized as the optimal choice for the treatment of multivessel coronary artery disease. Currently, the American Heart Association guidelines are available for severe MR and concomitant coronary artery bypass grafting (CABG), and few surgeons address mild or moderate MR at the time of CABG, mainly because the addition of mitral valve procedure at the time of CABG increases the risk of surgery. Most surgeons prefer to treat MR complicating ischemic heart disease with isolated CABG alone. However, some surgeons found no difference between isolated coronary artery bypass grafting (CABG) and CABG associated to MV surgery other studies evidence a better outcome with MV surgery, even in the case of moderate (2/4) IMR. Because of these conflicting data, this study was undertaken to examine the factors affecting the resolution of ischemic MR and early outcomes in patients with moderate ischemic mitral regurgitation undergoing CABG not undergoing mitral valve annuloplasty in the Philippine Heart Center. **Methods:** This is a prospective cohort study which involved chronic moderate ischemic mitral regurgitation patients admitted at the Philippine Heart Center who underwent coronary artery bypass graft without undergoing mitral valve annuloplasty from January 1, 2010 to September 31, 2011. After coronary artery bypass grafting, patients were followed up for a period of six months. A repeat transthoracic 2D-echo was performed prior to discharge or 1 month (whichever comes first) and six months after surgery to determine the severity of mitral regurgitation. **Results:** There were only 21 subjects who were eligible and consented in the study out of the estimated sample size of 33 patients from the period of January 1, 2010 up to September 31, 2011. Among the 21 patients eligible, 3 of them died because of post op complications and were not included in the analysis because post-op 2D echo was not made. From the 21 eligible subjects, only 8 of them followed up for a repeat 2D echo 6 months post-op, 3 of the 21 subjects died due to post-op complications and 11 did not follow up despite the advice. The incidence of resolution of ischemic MR immediately post CABG was 77% and about 11% has complete resolution of moderate IMR, while 6% of the population had severe MR after CABG. At follow up 50% of the population had resolution of IMR. The left atrial

and left ventricular diameters are higher among patients with resolution of IMR compared to those without resolution of IMR, but are not statistically significant except of the LVes diameter with a p value of 0.048. There was a significant increase in LV systolic function among patients with resolution of IMR compared to those without resolution of IMR. **Conclusion:** More than half of patients with moderate IMR, MR regress with CABG alone but after follow up of 6 months, residual MR increases by 50% of the population. Ischemic MR may be associated with increased mortality. Resolution of MR is related to pre-op LVes size and improvement in LV function. Presence chronic renal insufficiency and use of hypoglycaemic agents may be critical for MR non resolution following CABG alone.

PHC.R.050.09

Microalbuminuria and Coronary Artery Disease Among Non Diabetic Patients undergoing Coronary Angiogram at Philippine Heart Center

Josephine Matza-Recierdo, MD; Eduard Tin-Hay, MD

Background: Microalbuminuria has been associated with microvascular disease. It has been associated with progressive kidney disease and is now correlated with risk of stroke, left ventircular hypertrophy, adverse cardiovascular event and even d oath. The study aim to determine the relationship between the presence of microalbuminuria and coronary angiographic lesions among non diabetic patients. **Methods:** This is a cross-sectional study which involved admitted non diabetic patients with indications for coronary angiography at Philippine Heart Center. Demographic characteristics were obtained. Urinalysis was done to exclude patients with over proteinuria. Dip stick micral test was done using first void urine prior to coronary angiogram. Presence or absence of microalbuminuria was correlated with coronary artery disease. **Results:** One hundred ten subjects were included in the study. The prevalence of microalbuminuria among patients with coronary artery disease was 32.8%. Twenty eight percent of the total population had microalbuminuria. Seven percent of the subjects had abnormal waist to hip ratio which was statistically significant (p value 0.032). Among 110 subjects, 23% had normal coronaries and 7% had insignificant and significant CAD. Furthermore, out of 85 subjects with abnormal coronaries, 21 patients comprising 32.8% had microalbuminuria. The correlation between microalbuminuria and coronary artery disease was not statistically significant with a p-value of 0.261. **Conclusion:** Microalbuminuria did not have a significant association with coronary artery disease. The aid of microalbuminuria as an indicator of coronary artery disease among non diabetic patients was not etablished.

PHC.R.051.09

Adherence to ACCF/AHA Guidelines for the Management of Chronic Congestive Heart Failure in Adults and its Impact on Patient's Outcome: The Philippine Heart Center Experience

Sheila Mae L. Abadonio, MD; Jesus Jorge, MD

Background: The physicians management of congestive heart failure has been known to be varied. This prospective cohort clinical Study aimed to determine the adherence of physicians to the ACCF/AHA practice guidelines in the management of chronic congestive heart failure (CHF) in the Philippine Heart Center (PHC) and its impact on patients' outcome. **Methods:** It included 62 eligible patients diagnosed with CHF Stages C and D, admitted at PHC from June 1, 2010 to June 30, 2011. Patient who presented with acute pulmonary edema, recent myocardial infarction (1 month), cardiogenic shock, or planned surgery in the next 6 months and those who have no contact numbers were excluded. Baseline characteristics were obtained through patient interview, personal or though phone call and review of medical records. An adherence indicator was developed using a two-step procedure on the basis of the five pharmacological classes of drugs used in treatment of CHF. The same algorithm used in the MAHLER study was used to determine whether a physician is adherent or non-adherent to the guidelines for each medication. Patients were then followed up for the occurrence of death either through phone, review of medical records and through his attending physician during the index hospitalization and 6 months after discharge.

Result: The baseline characteristics did not differ significantly. Thirty-five were males and 26 were females. Most of the subjects were hypertensive (n=28) and has diabetes mellitus (n=11). Almost half of the subjects (48%) had smoking history. Forty-four subjects (72%) had ejection fraction less than 40%. The medications that were often prescribed were beta-blockers (79 %), diuretics (72 %), cardiac glycosides (77 %) and spironolactone (79 %). Most of the subjects belong to the NYHA Class II (71%) and Class III (29 %). The three most common causes of the underlying causes of chronic heart failure were rheumatic heart disease (25%), ischemic cardiomyopathy (20%) and dilated cardiomyopathy (11%). Most of the subjects were in sinus rhythm (77%). The adherence to guidelines did not differ significantly among the baseline characteristics. Out of the 61 subjects, 2 (3.3%) died because of stroke and heart failure, respectively. **Conclusion:** There is no significant difference between the outcome of patients with congestive heart failure who are treated according to the 2009 updated ACCF/AHA Guidelines for the diagnosis and management of heart failure and those who were treated otherwise (p-value: 1.000). However, this study is limited by an incomplete sample size.

PHC.R.052.09

Survival Analysis of Post Arrest Cardiac Patients

Anthony N. Lontoc, MD; Gerard Razon, MD

Background: There are many factors affecting successful cardiopulmonary resuscitation. One is the patient's characteristic which includes age, sex, and co-morbidities. Likewise, the quality of the resuscitation which is dependent to the latest guideline set by international medical specialist organization like American Heart Association and the very people conducting the resuscitation have large impact in the outcome. The objective of this study is to determine the factors affecting the outcome of cardiopulmonary resuscitation in cardiopulmonary arrest patients in our own local setting. **Methods:** Patients admitted in PHC who were more than 18 years old and had cardiopulmonary arrest (CPA) and was administered with ACLS by the Philippine Heart Center Medical Emergency Event (PHC-EE) team was included in the study. Patients with "Do Not Resuscitate" (DNR) status, before and during first arrest and CPA at the emergency room or operating room were excluded. All data from eligible patients who received ACLS from July 2010 to June 2011 were retrieved and reviewed. Patients who were successfully resuscitated were categorized to Group 1 and were followed up during the hospital stay to determine outcome en discharge. Patients who were unsuccessfully resuscitated or who had death were categorized to Group 2. Pre-arrest and arrest variables were recorded and analyzed between two groups. **Results:** One hundred seventy-five (175) patients from January to December 2010 were enrolled in the study. One hundred two patients who were successfully resuscitated were categorized under revived group and 73 patients who expired despite CPR were categorized under the mortality group. Baseline characteristics between two groups were similar except for the presence of diabetes which was noted to be statistically significant in the mortality group. There were 92 patients under the cardiac group and 83 patients under the non-cardiac group. More patients arrested in the ward for Group 1 (60%) and critical care unit in Group 2 (61%). There is no predilection between duty and off-duty hours in both groups (46% vs. 54% and 47% vs. 57% respectively. Arrhythmia was shown to be significantly associated with unsuccessful resuscitation (p<0.00l) in the cardiac group. Asystole/PEA was noted to be the most common initial ECG on arrest for the two groups. (69% and 77%). More than 90% of cases, the MET team arrived within one minute time. CPR duration of more than 30 minutes significantly was associated with mortality both groups. (p<0.00l). Only 27 patients were discharged after CPR. 32 (43%) patients expired, 42 (56%) signed for a DNR status and one (1%) decided for discharged against medical advice. Among these patients who eventually expired, the non-cardiac cases were significantly associated with mortality compared with the cardiac group (p=0.00l). **Conclusion:** The presence of diabetes is significantly associated with unsuccessful resuscitation in cardiopulmonary arrest patients, However, we cannot ignore that other factors such as age, smoking and alcohol history, and other co-morbidities plays a major influence in the outcome of CPR which WClS not shown in this study. The site and

timing of the arrests and the category of the patient does not affect the outcome. The PHC -MET team arrived on time. Prolong of CPR of more than 20 minutes was significantly associated with mortality, and thus, we can consider terminating resuscitative effort to ease the burden of both the family and medical team especially if the prognosis if poor.

PHC.R.055.09

Utility of Brain Natriuretic Peptide as Predictors of Outcome of Corrective Surgery in Congenital Heart Disease with Pulmonary Hypertension

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Background: Brain natriuretic peptide (BNP) is a neurohormone secreted in the cardiac ventricles in response from pressure overload. It is also a non-invasive biomarker that has been used for pulmonary hypertension. The aim of this paper is to determine the utility of BNP in predicting post-operative outcomes for CHD patients with pulmonary hypertension in Philippine Heart Center by determining the BNP values and correlating its association with the incidence of in-hospital and short term mortality, clinical outcomes of CHD patients with pulmonary hypertension undergoing corrective surgery. **Methods:** This is a cohort study involving 45 adult patients aged 18 years old and above, diagnosed with pulmonary hypertension secondary to congenital heart disease admitted in Philippine Heart Center for surgical correction. BNP was taken pre-operatively and correlated with the surgical outcome. **Results:** Results showed that there was no significant correlation on actual values of BNP and PAP. However, there seems to be a direct relationship between PAP and BNP levels but the standard deviation is wide for the relationship to be significant. **Conclusion:** With the small number of patients who develop morbidity in the study as to prolonged intubation, prolonged stay in the intensive care unit, events of pulmonary hypertension crisis and RV failure symptoms post-surgery, nothing can be said on the utility of BNP to predict the outcomes of adult patients with congenital heart disease with pulmonary hypertension after surgery.

PHC.R.056.09

Determining the Pulmonary Risk Classification Using Cardiopulmonary Risk Index (CPRI) After Cardiothoracic Surgery in Predicting Post-operative Pulmonary Complication as Compared to Shapiro Scoring as the Reference

Rhea Louela G. Jusi, MD; Dr. Aileen Banzon, MD

Background: In the Philippine Heart Center (PHC), Shapiro Risk Scoring is being used for risk stratification prior to cardiac surgery for a long time but recent data on preoperative assessment of pulmonary risk showed that this scoring does not predict its outcome. Another system is Cardiopulmonary Risk Index (CPRI) which combines the pulmonary factors and the established Goldman cardiac risk index, hence, we intend to use this index for preoperative pulmonary risk assessment prior to cardiac surgery at PHC. The focus of our study is to determine the pulmonary risk classification using CPRI after cardiothoracic surgery in predicting post-operative pulmonary complications as compared to Shapiro scoring as the reference. **Methods:** The study design of this research is prospective cohort, which was conducted at the PHC, from February to December 2010. All patients who are >18 years old who underwent elective cardiothoracic surgery were assessed and identified. An informed consent was obtained. Patients was scored based on CPRI, each cumulative score was classified as low, moderate or high risk depending on their post-operative outcome as to the timing of extubation. Patients were followed-up daily and development of postoperative pulmonary complications based on outcomes was identified and correlated with the scoring system. The mean values of CPRI for each risk classification was used to determine cut off for low, moderate, high risks based on variable (CPRI). To determine best cut-off of point for CPRI that predict complications, the sensitivity, specificity, PPV and NPV were determined. ROC was used to determine the best cut-off point. Kappa test was used to determine significance of agreement of score with outcome. A p-value ≤ 0.050 is considered significant. **Results:** The results showed that there was a significant difference noted as proven by the p value of <0.0001. The CPRI scores increased with increasing severity of Shapiro classification.

A score of ≥4 gives a high sensitivity, specificity, NPV as well as PPV. When the CPRI scores were compared between those with and without complications, there was a significant difference noted. The CPRI scores of patients with complications (5.35 ± 1.82) was significantly higher than those without complications (4.36 ± 1.65) with p value =0.002. Comparing the timing of extubation and complications based on CPRI, results showed that there was significant difference noted in the extubation time according to CPRI scoring as proven by the p value of <0.0001. The extubation time increases with increasing CPRI scores. Out of the 82 patients with complications, majority have CPRI scoring of 4–7. **Conclusion:** The results showed that the CPRI scores ranged from 1 to 9 with a mean of 4.98. Of the 131 subjects, 3 (2.3%) were classified at low risk, 114 (87.0%) were classified as moderate risk and 14 (10.7%) were classified as high risk based from Shapiro scoring. There were 82 (62.6%) patients with complications noted. The occurrence of complications increases with increasing CPRI scores and a score of >4 best predicts pulmonary complications.

PHC.R.063.09

The Association of Post-operative Glucose Levels with Clinical Outcomes of Cardiac Surgery Patients

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Background: Blood glucose levels are noted to significantly influence the outcomes of post-cardiac surgery patients in the immediate post-operative period. This prospective cohort study is aimed to determine the relationship of blood glucose levels and clinical outcomes of post-cardiac surgery patients at Philippine Heart Center recovery room/surgical ICU. **Methods:** We performed a prospective cohort study of cardiac surgery patients admitted at the recovery room/surgical ICU. Capillary blood glucose were measured in recovery room during the first 6 hours after cardiac surgery. Clinical outcomes were noted once patient is transferred to the recovery room/surgical ICU until patient is discharged. **Results:** 253 subjects were enrolled in the study. Blood glucose ranges from the 1st to 6th hour, with the positive outcomes having CBG range of 210.34 mg/dL (+ 87.296) to 300.45 mg/dL (+ 107.435), while those without the outcome were 196.72 mg/dL (+ 69.565) to 288.36 mg/dL (+ 93.788) respectively. **Conclusion:** This study showed no significant results in post-cardiac surgery patients with less intensive blood glucose levels.

PHC.R.064.09

Correlation of Physiologic Functional Variable with Hemodynamic Variables Among Filipino Children with Pulmonary Arterial Hypertension: Philippine Heart Center Experience

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Background: Six minute walk test (6MWT) is one of the most widely used tests to assess the functional capacity of a patient especially those with cardiopulmonary disease. Most of the studies on 6MWT were performed among adult patients. This study focused on the correlation of the hemodynamic parameters such as the arterial blood gas and pulmonary artery pressure with the six minute walk test particularly in a group of pediatric patients with congenital acyanotic heart disease. **Methods:** We prospectively studied patients with congenital acyanotic heart disease with pulmonary arterial hypertension. All subjects had 2D echo to determine pulmonary arterial press ire (PAP), arterial blood gas (ABG) analysis, 6MWT and Borg scale. We also classified them using the WHO functional classification for patients with pulmonary hypertension at the beginning of the study. **Results:** A total of 30 patients were enrolled in the study. Patients were classified in the WHO Functional Class I and II. No correlation was seen between ABG parameters and distance (all *p* value >0.05). A higher proportion of patients in WHO Class II had severe pulmonary hypertension compared to Class I but was not significant (*p* 0.64). No correlation was found with the severity of pulmonary hypertension and 6MWT distance. **Conclusions:** No correlation noted with ABG, pulmonary pressure and distance walked in the 6MWT.

PHC.R.066.09

Outcomes of Patients with Mitral Valve Disease After Mitral Valve Surgery

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Background: Mitral valve repair and mitral valve replacement have been the mainstays in the management of mitral valve disease. This study was done to determine the outcomes of pediatric patients undergoing mitral valve surgery. **Methods:** We reviewed the records of patients aged 0-19 years old who underwent mitral valve surgery from 2002 to 2004. We obtained the clinical, echocardiographic and outcome characteristics of these subjects. We followed them up for a period of 1 to 6 years and determined the echocardiographic characteristics during these times. **Results:** Forty-five (45) subjects were enrolled, with 24 patients underwent MV repair and 21 patients underwent MV replacement. Majority of the lesions were mitral regurgitation and rheumatic in etiology. There were 3 mortalities reported in this study. There is a significant decrease in LVESD, LVEDD and left atrial size and an increase in mitral valve area noted one year after surgery. **Conclusion:** Majority of the subjects who underwent mitral valve surgery had a rheumatic etiology of their mitral valve lesions. Majority of the lesions are mitral regurgitation. Mitral regurgitation and mitral stenosis improved over time after the mitral surgery.

PHC.R.067.09

Prevalence of Clopidogrel Resistance Among Filipinos with Coronary Artery Disease: a Philippine Heart Center Experience

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Background: Clopidogrel is an antiplatelet medication used in patients with coronary artery disease. A considerable number of patients still experience recurrent ischemic events secondary to thrombosis despite its use. A myriad of factors might contribute to individual responsiveness to clopidogrel. We evaluated the prevalence of clopidogrel resistance among Filipinos and its associated risk factors. **Methods:** One hundred eleven (111) patients with documented stable coronary artery disease and who had acute coronary syndrome for more than 6 weeks on a maintenance dose of 75mg clopidogrel for at least two weeks were enrolled. Baseline clinical characteristics were gathered. Whole blood sampling was done to measure platelet function by impedance aggregometry using a point-of-care testing (Multiplate® analyzer; Dynabyte Medical, Munich, Germany). **Results:** Seventeen (15%) out of 111 patients recruited in the study were classified as low responders to clopidogrel. The mean age of patients recruited was 60 years old and majority of those recruited were males (n=83, 75%). On multivariate analysis, the use of proton pump inhibitors (PPIs) was associated with statistically significant greater odds of clopidogrel resistance (OR 6.5, 95% CI: 1.96-22.09 p=0.010). On further analysis of patients taking proton pump inhibitors, we found that only those exposed to omeprazole had a significant association with clopidogrel resistance (OR 9.83, 95% CI: 2.54 to 39.35). No significant correlation was demonstrated in the other clinical parameters observed. **Conclusion:** The prevalence of Clopidogrel resistance using the Multiplate assay in Filipinos with stable CAD was 15%. Concomitant use of the proton pump inhibitors, specifically omeprazole, significantly increase the odds of clopidogrel resistance by 9.83.

PHC.R.068.09

A Randomized Controlled Trial Comparing Adequacy of Anticoagulation Between Traditional INR Management versus Nomogram Based INR Management Among Post Mechanical Valve Replacement Patients at the Philippine Heart Center

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Background: At present, the adequacy of anticoagulation at the outpatient department of the Philippine Heart Center for post valve replacement patients is not known. The general objective of this study is to determine a more effective method of anticoagulation titration in patients with prosthetic mechanical heart valve in the Philippine Heart Center. The specific objectives are to determine the outcomes of anticoagulation among patients receiving

traditional INR management and nomogram based INR management, to compare embolic and bleeding outcomes between the two methods of INR management and to determine Anti-coagulation control in the two methods of INR management. **Methods:** We randomly allocated post mechanical valve replacement patients who required warfarin either to the traditional or nomogram based INR management arm. The quality of oral anticoagulant management was evaluated by comparing the proportion of time that the international normalized ratio (INR) of patients receiving warfarin was within the target therapeutic range in both arms. The rates of thromboembolic and major hemorrhagic events were measured. **Results:** A total of 62 patients were enrolled with 31 patients randomized to each arm of the study. There were no bleeding or thrombotic complications observed in either study group. The INR of patients in the traditional INR management arm were within range 36.46 ± 27.91% of the time, while the INR of patients were within range 42.55 ± 27.64% of the time in the nomogram INR management arm (p value= 0.391). There was no significance difference in the percentage of time INR values were within range between the Traditional INR management arm and nomogram based INR management arm (*p* value= 0.95) in patients with target INR of 2.0-3.0. Among patients with target INR of 2.5-3.5, the percentage of time INR values were within range was higher in the nomogram based INR management arm (36.46 ± 27.82) than that in the traditional INR management arm (24.11 ± 20.10) as but this difference did not reach statistical significance (p value= 0.059). Patients in the traditional INR management arm had a higher percentage of time INR values were below range (70.67 ± 21.55) than patients in the nomogram based INR management arm (51.01 ± 29.52) which was statistically significant (*p* value = 0.017) **Conclusion:** There was no significant difference in the anticoagulation control between the traditional and nomogram based INR management arm.

PHC.R.069.09

Empiric Monitoring of Activated Clotting Time (ACT) versus Non ACT Monitoring Prior to Cardiopulmonary Bypass: a Cohort Study

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Background: In cardiac surgery, heparin administration is an essential step before establishing cardiopulmonary bypass. This prevents the non-physiologic stimulus of CPB which causes massive activation of the hemostatic system. To counter the anti-coagulation effect of heparin, protamine is given immediately after bypass procedure. Prior to the commencement of cardiopulmonary bypass (CPB), activated clotting time (ACT) is determined in a structured manner. It is determined 5 minutes after heparin 3mg/kg induction; and every 30 minutes while the patient is on CPB, and 10 minutes after heparin reversal with protamine. However necessary in heparin titration during CPB, several patients were noted to have been given heparin 3mg/kg prior to CP but no ACT determination were taken 5 minutes after heparin induction. Do patients undergoing cardiopulmonary bypass with no serial ACT determination will have similar post-operative outcome as those who underwent serial ACT determination. **Methods:** This is a cohort study which aims to compare the postoperative outcomes in terms of postoperative CTT drainage and cerebrovascular events among patients who underwent ACT monitoring 5 minutes post heparin 3 mg/kg administration and those who do not have ACT monitoring 5 minutes after. Data were analyzed using the Statistics/Data Analysis (STATA version 11.0). *T*-test and Levene's Test and Chi-Square test were done in comparing the baseline characteristics of the study population between the two groups. Univariate Analysis of Variance and Chi-Square tests were likewise used to analyze the outcomes in terms of post-operative CTT drainage and CVA. **Results:** A total of 139 patients were included. The data have shown that the subjects in those with ACT determination and those witoout ACT determination are comparable in terms of demographic characteristics such as age, gender, type of s surgery and co-morbidities. As to comparing the CPB variables between the two groups, the CPB the CPB time, temperature and ACT levels after protamine reversal were also statistically analyzed and were noted to be insignificant. These CPB variables play vital roles as factors that can contribute to the post-operative outcome of patients in terms of

bleeding and other complications. There is a significant increase in the chest tube drainage in the non ACT monitoring group as compared to the group which monitors ACT. With regards to the incidence of CVA, the data is inconclusive since. The study have shown that 96% of patient who underwent monitoring of ACT prior to initiation of CPB have achieved the desired level even with a single dose of heparin, indicating that the heparin dosage is adequate and would favor more on non ACT monitoring, but it does not discount the fact that still 4% among the this population may have developed, in one way or another, resistance to heparin hence the desired ACT level may not be achieved, resulting to a catastrophic post-operative outcome. Therefore prudence requires that ACT determination prior to initiation of cardiopulmonary bypass, as per anticoagulation protocol, should be strictly followed. **Conclusion:** The data from the study have shown that there is a significant increase in the post-operative CTT drainage among patients without ACT monitoring after heparin administration. Based on the literatures reviewed, the mechanism can be best explained by inadequate anticoagulation among this group since the other factors present which are possible contributory are not comparable. With regards to the incidence of cerebrovascular incident, the data would not support any conclusive evidence among the two groups of patients.

PHC.R.071.09

Surgical Treatment of Coronary Artery Fistula: Philippine Heart Center Experience

Samuel Anthony R. Yadao, MD

Background: A congenital coronary artery fistula is a direct communication between a coronary artery and a cardiac chamber, the coronary sinus, the vena cava, the pulmonary artery, or pulmonary veins close to the heart. The natural history of coronary artery fistula is such that they tend to increase in size, and without surgery the patients do not have a normal life expectancy. A review on the surgical outcome from our experience will benefit both the clinician and the surgeon as compared to other institutions experience. **Objectives:** The study aims to describe demographic, clinical characteristics, surgical outcome of Coronary Artery Fistula, the presenting symptoms of CAF, the most common site of occurrence of CAF and its drainage, the surgical procedure and outcome of CAF and the mortality and morbidity of CAF after surgery. **Results:** A total of 23 patients with CAF were included in the study from January 1998 to November 2009. There were 12 males and 11 females in the study. The age range was from 11 days old to 55 years old, 14 pediatric patients and 9 adults. Congenital heart disease was identified in 18 cases and rheumatic heart disease in 5 cases. Isolated CAF were noted in 15 cases and 8 cases were with associated cardiac lesions which require additional surgical procedure. Most common presenting sign and symptoms were continuous murmur. Coronary Artery Fistula Ligation was done in fourteen patients; seven had CAF closure, one had CAF transaction and one had plication together with the aneurysmal sac. The average length of hospital stay was 17 days (range of 5 to 77 days). There was no operative mortality from our study, however morbidity noted were pneumonia (3 patients, 13%), acute renal failure (2 patients, 8%), complete heart block (1 patients, 4%), and upper gastrointestinal bleeding (1 patient, 4%). **Conclusion:** Careful analysis of the clinical data and proper diagnosis modality can accurately indicate a diagnosis of coronary artery fistula. Appropriate surgical techniques can provides satisfactory result in the majority of patients. The goal of surgical intervention is to close a fistulous connection while preserving coronary artery anatomy. A coronary fistula may be safely closed without CPB when the lesion is discrete and its location and size are appropriate.

PHC.R.075.09

Effect of the Implementation of Point-of-care Satellite Laboratory on Tests Turn-around Time: the Philippine Heart Center-Emergency Room Experience

Roselle Tejano-Tolentino, MD; Arlene M. De Luna, MD; Felipe S. Templo, MD

Background: Point-of-care-testing (POCT) is one of the innovations in laboratory medicine that has been recently employed in medical institutions to facilitate timely management of

patients at the emergency room. This study aimed to evaluate the turnaround time (TAT) of the critical laboratory tests (K+, Troponin I, CKMB) and compare with the TAT of the same tests done at the Main laboratory before implementation of ER-POCT satellite laboratory. The effects of the implementation of POCT to common critical tests TAT, the phases of workflow were identified and other factors that may contribute to those effects, such as workload, shift and number of staff, were considered. **Methods:** This was a retrospective-prospective study of TAT of three tests namely serum K, Troponin I and CK- B during pre-implementation (September 2008 to 2009) and implementation (April 2010-April 2011) of the ER-POCT Satellite Laboratory. TAT was further classified to the following work flow phases: charge-to-receipt, receipt-to-draw, and draw-to-report. Comparison between pre-implementation and Implementation sample TAT was done using *T*-test. Other factors that may affect TAT such as sift, workload and number of staff had been analysed using ANOCOVA. Percentages of test completion within time periods (30 mins, 1 hour, 2 hours, >2 hours) were compared. **Results:** Comparison of TAT between pre-implementation (n=634) and implementation (n=764) in all three tests and in different work flow intervals have shown a remarkable shortened TAT (58-78% decrease). The major part that contributed to decreased TAT came from the lessened receipt-to-draw phase. Overall analysis of different factors such as shift, workload and number of staff had no significant association with TAT in both pre-implementation and implementation samples, with an improved effect on receipt to draw time on a highly frequent test (Troponin I) by increase number of staff at POCT Majority (>50%) of tests were completed within 1 hour at POCT compared to >2 hours at Main Laboratory. **Conclusion:** Implementation of POCT satellite laboratory at the ER have shown a shortened TAT of the three tests (serum K, Troponin I and CK-MB) compared to the pre implementation test TAT. There was no overall association of between shift, workload, numbers of staff and TAT of tests in both pre-implementation and implementation samples.

PHC.R.076.09

Long Term Outcome of Aortic Valve Regurgitation After Repair of Ruptured Coronary Sinus of Valsalva: PHC Experience

Samuel Anthony R. Yadao, MD; Reynante Gamponia, MD

Objective: To determine the incidence of mild to moderate AR among patients undergoing RCSOV repair, the severity of AR after long term follow-up from RCSOV repair and determine factors affecting the degree of aortic regurgitation post-RCSOV repair. **Methods and Results:** This is a cohort study on outcome of aortic valve regurgitation after RCSOV repair. Study population consist of patients who underwent RCSOV repair with a follow-up 2D echo done ≥ 1 year after the operation done at Philippine Heart Center from March 1999 to April 2009. The follow-up transthoracic echocardiogram done at least 2 years from RCSOV repair were reviewed for the severity of AR. The follow-up 2D echo were evaluated for status of the AR. During 10-year period from March 1999 to April 2009, 48 patients underwent an operation for ruptured coronary sinus of Valsalva aneurysm, however only 24 patients had completed post-op echo and follow-up echo were included in the study. Seventy-nine percent of the patients were men. The mean age of patient at repair of RCSOV was 32 ± 11 years, ranging from 18 to 58 years. There were 21 patients originated from the right coronary sinus and 3 in the non coronary sinus. The mean interval of post op echo and follow-up echo 4 ± 2 years (ranging 1-8 years). We have 3 mortality, one death due to myocardial failure and two late deaths occurred on their 6^{th} and 7^{th} year after operation probably due to congestive heart failure as mentioned by the parents in a phone conversation. Morbidity noted were the following: 2 reoperation for bleeding, 3 post pericardiostomy syndrome, and 3 had transient arrhythmia. **Conclusion:** The fate of aortic regurgitation after RCSOV repair depends on the status of the aneurysm, associated lesion contributing to the sinus wall and aortic valve annulus morphology. The number of year does not affect the severity of AR.

PHC.R.001.10

The Prognosis Value of Red Blood Cell Distributed Width in Predicting Major Adverse Cardiovascular Events Among Patients with Acute Coronary Syndrome

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Background: Red cell distribution width (ROW) is the quantitative measure of anisocytosis, the variability in size of the circulating erythrocytes. Although not previously correlated with cardiovascular outcomes, elevation of ROW has been associated with other disease processes, including liver disease, malnutrition, occult colon cancer, and neoplastic metastases to marrow. **Methods:** We enrolled 523 subjects with Acute Coronary Syndrome (ACS) from October 2008 to December 2009. We determined the Troponin I levels and RDW from their CBC results. We followed them up for 6 months to determine occurrence of any major adverse cardiovascular outcomes. **Results:** The study population consisted of 353 (67.5%) males and the mean age is 61.65 ± 12.726 years old. There were 76 subjects (14.5%) with unstable angina; 218 (41.7%) with non-ST elevation myocardial infarction; and 229 subjects (43.8%) had a diagnosis of ST- elevation myocardial infarction. RDW value of ≥ 14.15 is most predictive of cardiovascular events with a sensitivity of 38.1%, specificity of 76%, and kappa co-efficient of 0.107 ± 0.043. It further proves that ROW is an independent predictor of MACE as with Troponin I. However, high Troponin I values had a 2.502 times ability to predict MACE than when it is low. High ROW on the other land, had a 1.273 times ability to predict MACE than when it is low. Nevertheless, when ACS patients presents with a negative Troponin I result, the prognostic relevance of ROW cannot be of use. **Conclusion:** ROW is an independent prognosticator of cardiovascular events among ACS patients. A cut-off score of ≥ 14.15 is most predictive of this condition. A positive Troponin I result enhances the prognostic relevance of ROW. These observations might lead to the rationale of introducing ROW as a part of the algorithm in cardiovascular risk prediction that would further enhance treatment guidelines in the future.

PHC.R.007.10

The Association of Smoking and Pulmonary Tuberculosis in Filipino Adults

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Background: This study investigates the association between smoking and the development of pulmonary tuberculosis, as both are prevalent in this country and independently lead to great morbidity and mortality. Such an association, if conclusively proven, could lead to wide-reaching consequences on policies regarding tuberculosis management and smoking cessation. **Methods:** A purposive convenience sampling of Filipino adults presenting at Bagong Silang, Quezon City for check-up was divided into two comparative groups of smokers (defined as having smoked ≥100 cigarettes) and non-smokers (including passive smokers). All patients were interviewed and examined, and subjected to PPD testing and chest X-ray. Any patients suspected to have tuberculosis also underwent sputum AFB testing. Depending on the composite clinical picture, patients were then classified as either: a) Negative for Tuberculosis; b) Positive for Tuberculosis Infection; and c) New case of Tuberculosis. To determine the association between smoking and Tuberculosis, Chi-square test or Fisher exact test was applied to the data. Odds ratio was computed, and independent effect of smoking was determined using multivariate analysis. **Results:** Out of a total of 150 subjects, 71 (47.3%) were smokers, while 79 (52.7%) were non-smokers. Of the 79 nonsmokers, 39 (49.3%) had significant second-hand smoke exposure. Thirty-one (20.7%) were found to have latent tuberculosis, of whom 17 (54.8%) were smokers, 6 (19.4%) were passive smokers, and 8 (25.8%) were non-smokers. There was no correlation found between latent tuberculosis and smoking status, with a *p*-value of 0.930. Twenty-two (14.7%) patients were positive for tuberculosis disease; 14 (63.6%) of them were smokers, 5 (22.7%) were passive smokers, and 3 (13.6%) were nonsmokers. There was also no correlation found between tuberculosis disease and smoking status, with a *p*-value of 0.817. However on sub-group analysis, increased age was found to be significantly correlated with an increased incidence of tuberculosis disease, with a *p*-value

of 0.003. COPD was also significantly correlated with tuberculosis disease, with a *p*-value of 0.025. Only COPD was correlated with an increased risk of development of latent and active tuberculosis combined, with a *p*-value of 0.017. **Conclusion:** No association was found between smoking and the development of either tuberculosis infection or disease in this study. However, on subgroup analysis, COPD and increased age were both correlated with the development of active tuberculosis, while COPD was correlated with the development of latent and active tuberculosis combined. This suggests that a higher threshold of cigarette smoking (above the predefined value of ≥100 cigarettes/lifetime used in the study) may lead to an increased risk for tuberculosis, pending further investigation.

PHC.R.008.10

The Red Cell Transfusion Practice in Isolated CABG Patients Stratified as Low, Moderate and High Risk Groups Based on Blood Transfusion Risk Scoring at the Philippine Heart Center

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Background: Blood transfusion, although often life-saving, is also associated with significant risk to the patient. Blood transfusion practices have not yet been fully evaluated nor regulated in our institution. Based on preoperative patient characteristics and laboratory data, we may be able to predict blood transfusion risk. In this study, we ought to investigate blood transfusion practices in our institution as related to a blood transfusion risk score. **Methods:** This is a prospective study involving 61 patients who underwent isolated Coronary Artery Bypass Graft surgery at the Philippine Heart Center. Preoperative patient characteristics such as age, sex, body surface area, as well as routine laboratory data including LVEF, creatinine, and hematocrit were used to stratify patients as low, moderate, or high risk. These were then correlated with the number of PRBC units transfused at different stages of surgery until 24 hours post-op. Descriptive data were presented as mean ± SD. Continuous variables among the three groups were compared using one way ANOVA. A p-value of 0.05 was considered statistically significant. **Results:** Most of the patients were stratified under the low risk group (49%, n=30). Blood transfusion in the low risk group was significantly lower compared to the moderate and high risk group ($p<0.0005$). Blood transfusion is highest when weaning off pump. However, the difference among the low, moderate, and high risk groups was not statistically significant. **Conclusion:** This preliminary study shows good correlation between blood transfusion and blood transfusion risk scoring in patients undergoing isolated CABG at the Philippine Heart Center.

PHC.R.009.10

Effects of Varying Hypothermic Cardiopulmonary Bypass Perfusion Temperatures in Early Postoperative Renal Function on Patients Undergoing On-Pump Coronary Artery Bypass Grafting: the Philippine Heart Center Experience

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Background: The technique of using hypothermia during CPB is primarily for end organ preservation by meal IS of reducing the metabolic demand of the body. However, no definite temperature for renal preservation has been recommended in literature. This study aims to determine if varying CPB temperatures would play a role in the development of early postoperative AKI in patients undergoing elective on-pump CABG. **Methods:** This is prospective cohort study on all patients undergoing first time on-pump elective CABG at the Philippine Heart Center from June 1, 2011 to May 31, 2012 and without evidence of preoperative renal insufficiency (estimated creatinine clearance >60 ml Min-1, calculated by the Cockcroft - Gault formula). Medical history and intra-operative variables, including lowest nasopharyngeal and venous CPB perfusion temperatures, were collected. Institutional surgical protocols and extracorporeal perfusion techniques with the exception of the intended core temperature during CABG was followed. Temperature was either 28-30°C or 32°C depending on the preference of the operating surgeon. Two measurements of serum creatinine were done via blood extraction >12 hours apart. Primary endpoint was the development of

early postoperative AKI (defined as absolute increase of serum creatinine by the Acute Kidney Injury Network definition and diagnostic criteria for AKI). **Result:** This study included 197 patients. AKI occurred in 47 (23.9%) patients, 32 (25.4%) from the moderate hypothermia group (28°C - 30°C) and 15 (21.1%) from the mild hypothermia group (32°C). Fischer's exact test to determine the association of the two groups of CPB temperatures and development of AKI showed 0 association of CPB temperature with the development of AKI. After adjusting for con-founders, only Diabetes Mellitus (OM) (Odds Ratio (OR) 2.10, 95% Confidence Interval (CI): 1.05, 4.60, P = 0.036) showed significant association with the development of AKI post operatively. **Conclusion:** The varying hypothermic CPB perfusion temperature had no effect on early post-operative renal function particularly the development of AKI in patients undergoing elective on-pump CABG at the Philippine Heart Center and that multiple factors in the perioperative phase were the reasons for renal dysfunction post operatively.

PHC.R.010.10

Frequency and Severity of Myocardial Perfusion Abnormalities Using Single-Photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging in Patients withMetabolic Syndrome with Suspected Coronary Artery Disease

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Background: Metabolic syndrome is a cluster of major cardiovascular risk factors: central obesity, atherogenic dyslipidemia, insulin resistance and elevated blood pressure. All of which are associated with major adverse cardiovascular events (MACE). The aim of this study is to determine the association of myocardial perfusion abnormalities in patients with suspected CAD with one or more risk factors for metabolic syndrome. **Methods:** Patients presenting with one or more component factors for metabolic syndrome, as characterized by the International Diabetes Federation (IDF) definition, that underwent exercise or pharmacologic stress SPECT MPI were included in the study. Images were interpreted using a 17-segment myocardial model and normalized to percent of the total myocardium involved with ischemic defects. **Results:** A total of 206 patients presenting with one or more component factors for metabolic syndrome were included. The most common component factor present in the population was elevated blood pressure. It was noted there is weak correlation with regards to the number of component factors present with perfusion and reversible defects with an *p* value of 0.179 and 0.183, respectively. Odds ratios (95% Confidence Intervals) were about two-to three-fold of having perfusion or reversible perfusion abnormalities in patients with metabolic syndrome, especially those with 4 or more risk factors present. **Conclusion:** There is correlation with number of risk factors present and the likelihood of having perfusion and reversible perfusion abnormalities with two-to three-fold probability.

PHC.R.014.10

Diagnostic Accuracy of Ultrasound in Differentiating Focal Fat Sparing and Neoplastic Nodules in Patients with Fatty Infiltration of the liver Using Computed Tomography Scan as Reference Standard

Cherry Rose Taguba-Banez, MD, Marvin T. Tamaña, MD

Background: Differentiation of focal fat sparing and neoplastic nodules in the background of fatty infiltration of the liver remains to be a diagnostic dilemma. CT scan and MRI remain to be the imaging modalities of choice. However, ultrasound is an established modality in screening patients with fatty infiltration of the liver. The objective of this study is to establish the diagnostic accuracy of ultrasound in differentiating focal fat sparing from neoplastic nodule in patients with fatty infiltration of the liver using computed tomography as reference standard. **Methods:** A criterion reference based cross-sectional study was conducted. Thirty-six (36) subjects who underwent ultrasound at the Philippine Heart Center from January 2010 to September 2012 with sonographic finding of fatty infiltration of the liver with focal fat sparing were included. CT scan was used as reference standard to differentiate focal fat sparing and neoplastic nodule. **Results:** Ultrasound is highly sensitive (Sn=85.7%) but not specific (Sp=0.0%) in diagnosing focal fat sparing using CT scan as

reference. P'V (17.1%) and NPV (0.0%) is low. There is low agreement between the two modalities (K=:0.027 ± 0.027). However, ultrasound showed high sensitivity (Sn=100.0%) and specificity (Sp=88.6%), respectively, in diagnosing hepatic neoplastic. NPV was high (NPV=100.0%) while PPV was low PPV=20.0%). There is slight agreement between the two modalities (K=0.301 ± 0.119). **Conclusion:** Ultrasound is highly sensitive in accurately diagnosing focal fat sparing; however, it is not highly specific for the lesion. There is likewise high sensitivity and specificity of ultrasound in accurately diagnosing hepatic neoplastic nodule. However, the use of ultrasound in the determination of hepatic neoplastic nodule cannot be a definite substitute to CT-scan.

PHC.R.015.10

Comparison of the Correlation of the RDPA/ Tracheal Index in Upright Chest Radiograph and Estimated Pulmonary Artery Pressure Derived by Lau and Turner Method with Pulmonary Artery Pressure Derived From 2D Echocardiography in Patients with Mitral Valve Disease

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Background: Radiographs are a mainstay in the diagnostic evaluation of patients with cardiovascular disease. Patients with mitral valve disease develop pulmonary arterial hypertension secondary to pulmonary venous hypertension which leads to pulmonary vascular alterations, among them, enlargement of the pulmonary arteries. Based on radiographic changes, Lau and Turner developed a method of estimating pulmonary artery pressure using upright radiographs. This study was done to correlate the degree of enlargement of the pulmonary artery represented by the right descending pulmonary artery/tracheal index (IDPA/ Tracheal index) with the degree of pulmonary hypertension using 2-D echocardiography as reference standard. **Method:** Thirty-four adult patients diagnosed with Mitral Valve Disease wherein an upright chest radiograph and 2D echocardiographic study were done within a month of each other were included in the study. Both the RDPA/Tracheal index and estimated pulmonary artery pressure using the Lau and Turner method were determined using upright chest radiographs. The pulmonary artery pressure measurement derived by 2D echocardiography based on the TR jet was retrieved. **Results:** There is poor correlation between the RDPA/Tracheal index and pulmonary artery pressure derive d by 2-D echocardiography (r=0.415). There was good correlation between the Lau and Turner method and pulmonary artery pressure derived by 2D echocardiography (r=0.786). **Conclusion:** Among patients with mitral valve disease, the Lau and Turner method had a better correlation to pulmonary artery pressure by 2D echocardiography compared to the RDPA/ Tracheal Index.

PHC.R.016.10

Preoperative Risk Scoring System for Infants and Young Children Undergoing Cardiothoracic Surgery (PREdict): a Proposed Risk Stratification Methods to Predict Postoperative Pulmonary Complications in Children Six Years Old Below Undergoing Cardithoracic Surgery at the Philippine Heart Center

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Background: An infant or a young child is an important population in the field of cardiothoracic surgery as they are more prone to develop postoperative pulmonary complications. Risk assessment in this population will benefit them of a well planned surgery. However, this is currently unavailable. This study aimed to propose a risk stratification method for postoperative pulmonary complications among children 6 years old and below who will undergo cardiothoracic surgery. **Methods:** We prospectively followed-up 236 children, aged 6 years old and below, who underwent cardiothoracic surgery from September - March 2013. Preoperative risk factors included age, gender, weight, cardiac diagnosis, type of surgery, history of respiratory tract infection and reactive airways disease and the need for preoperative mechanical ventilation. Laboratory data included complete blood count, blood gas, serum albumin, bleeding parameters, 2D

echocardiogram and tidal breathing analysis. ASA and RACHS-1 scoring were also included. Primary outcome measure is postoperative pulmonary complication and secondary outcome measures included duration of post-op mechanical ventilation, recovery room and PICU stay, overall length of postoperative hospital stay and death. **Results:** Two hundred eighteen (7%) out of the 286 children developed postoperative pulmonary complications, with atelectasis, pneumonia and air leaks as the most frequent complication noted. Among the clinical variables analyzed, 14 variables were independent predictors of postoperative pulmonary complications: age <28 days old, weight of <8.85kg, history of RTI and reactive airways disease, use of mechanical ventilation preop, pulmonary hypertension, pH <7.35 and >7.45, p02 <80, wbc <5 and >10, neutrophils >39.5, lymphocytes <47.5, serum albumin <32, high ASA and RACHS-1 score. RO: analysis derived the best minimum cut off score of 8 points, with a lowest and highest achievable score of 1 and 20 respectively and with a sensitivity of 79.4%, specificity of 61.8%, positive predictive value of 86.9% and an overall accuracy of 56%. **Conclusion:** The use of this scoring system will help us screen, categorize, and risk stratify children 6 year old and below before subjecting them to cardiothoracic surgery.

PHC.R.017.10

Effect of Oxygen Challenge Test Response to Postoperative Outcome Among Congenital Heart Disease Patients with Moderate to Severe Pulmonary Hypertension

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Background: Pulmonary arterial hypertension (PAH) is a known complication of unrepaired congenital heart disease (CHD) and is often the principal determinant of the clinical manifestations, course and feasibility of surgical treatment. Diagnostic work-up to determine feasibility of surgery includes invasive procedure like cardiac catheterization or lung biopsy. In our setting, we chose a simple and inexpensive diagnostic tool that would guide us in the management. To our knowledge, this is the first study with a prospective component that would determine the association of preoperative oxygen challenge test response to postoperative out come in terms of inhospital mortality and right ventricular dysfunction/failure among CHD patients with moderate to severe pulmonary hypertension. **Methods:** An ambispective cohort study was conducted among CHD patients with moderate to severe pulmonary hypertension who underwent surgical repair at PHC. Patients were followed up from the time of operation until the time of discharge. Chart review was also conducted and enrolled patients who met the inclusion. Baseline characteristics and preoperative oxygen challenge test response were noted. Primary outcome is in-hospital mortality. Secondary outcome is right ventricular (RV) dysfunction/ failure. **Results:** There were 65 patients included in the study. Mean age is at 52 $\pm$ 10.792. Most were females (69%), had atrial septal defect (ASD) (54%) and with moderate pulmonary hypertension (54%). The observed inhospital mortality rate was 6% and RV dysfunction is 12%. Room air $S0_2$ and $S0_2$ difference were associated with both post-operative in-hospital mortality and right ventricular dysfunction. $S0_2$ difference (AUC of >0.6) has substantial ability to predict mortality. $S0_2$ difference of <3.5 is the best-cut off to predict mortality with a sensitivity 50.0%, specificity of 54.1%, PPV 6.7 % and NPV 94.3%. $S0_2$ (room air), $S0_2$ (0_2 challenge) and $S0_2$ difference (AUC >0.5) were also considered in determining the cut-off for RV dysfunction, although less substantial. **Conclusion:** Pre-operative oxygen challenge test is of value in predicting postoperative outcome in moderate to severe pulmonary hypertension. Room air $S0_2$ and $S0_2$ difference was associated with both postoperative in-hospital mortality and right ventricular dysfunction. $S0_2$ difference. of <3.5 is the best-cut off to predict mortality.

PHC.R.018.10

Association Between the Different Levels of Oxygen Therapy and the Rate of Resolution of Pneumothorax in Pediatric Patients Who Underwent Cardiothoracic Surgery

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Background: The most common complication

in cardiothoracic surgery is pneumothorax. Varied levels of oxygen levels are given based on clinical considerations to facilitate resorption. However, the relationship between the resolution or resorption and the level of oxygen has not been fully established in human studies. **Methods:** This is a prospective cohort study involving pediatric patients who underwent cardiothoracic surgery and had pneumothorax after chest tube removal. Demographic and management characteristics were also included and tabulated. The Rhea method was used for pneumothorax size measurement. Outcome was the rate of resolution expressed in cm/hr. Patients were classified as under Group 1 - with resolution and Group 2- without resolution. Oxygen levels were divided into 3 groups which were as follows: group 1 ($Fi0_2$ <45%), group 2 ($Fi0_2$> 45-60%) and group 3 ($Fi0_2$>61%). **Results:** There were 34 patients in the study. Demographic profiles did not differ as well as the time interval between chest x-rays (26.32+9.13 and 25.13+8.94). Group 2 had a longer hospital stay (23.93+ 18.69 and 16.53 + 15.61) and higher oxygen requirements than group 1(40.73±12.87 and 35.11±7.93). Patients in the <45% $Fi0_2$ group and >45-60% $Fi0_2$ group resolved (63% and 37% respectively) within 24-48 hours; however, this was statistically significant (p-value = 0.182.) **Conclusion:** There is an inverse relationship between rate of resolution of the pneumothorax and the different oxygen levels, but no statistically significant relationship was observed in this study. Higher percentage of resolved pneumothoraces was observed at > 45%.

PHC.R.019.10

The Accuracy of the EUROSCORE in the Prediction of 30-day Mortality in Adult Coronary Artery Bypass Graft patients at the Philippine Heart Center

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Background: The EuroSCORE, which has 2 models, has been evaluated in different countries in terms of accuracy in predicting mortality rate. No similar validation studies for the additive and the logistics model in the local setting have been found. This paper aims to determine the accuracy of the 2 models of the EuroSCORE in predicting mortality in the post CABG patients at the Philip-pine Heart Center. **Methods:** All adult patients who underwent Coronary Artery Bypass Graft were included in the study. Logistic and additive EuroSCORE were computed for each patient. At the end of the study, the observed mortality and expected mortality was compared. A cut-off score that best predicted actual mortality was determined. **Results:** A total of 511 patients were included in the study with 27 mortalities observed. The cut-off point determined was ≥ 7 for additive and ≥4.8% for logistics. This cut off point for the additive scoring has a sensitivity of 77.8%, specificity of 79.4%, PPV of 17.5 and NPV If 98.4 % while the logistics cut off point has a sensitivity of 81.5%, specificity of 71.4%, PPV of 13.8 and NPV of 98.6. The AUC of both the logistics and additive EuroSCORE is above 0.80 signifying that it can be used to determine 30-day mortality risk post CABG. **Conclusion:** EuroSCORE can be used as a predictor of 30 day mortality after CABG here in Philippine Heart Center; however, both the additive and the logistics scoring system underestimated the actual mortality rate.

PHC.R.021.10

Pre-operative and Intra-operative Parameters Predictive of Neurological Sequelae in Pediatric Patients Undergoing Bidirectional Glenn Shunt

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Objective: Neurological sequelae after cardiovascular palliative procedures may occur occasionally. In Bidirectional Glenn Shunt, the Superior Vena Cava may be clamped increasing the proximal pressure, which may impair cerebral blood flow. **Methods:** A retrospective cohort was performed in 56 patients with functional univentricular heart, who underwent Bidirectional Glenn Shunt from January 1999 to August 2010 at the Philippine Heart Center. Baseline characteristics including age of operation, weight, gender, preoperative diagnosis, 02 saturation, hemoglobin level, previous cardiovascular operation, echocardiographic data were reviewed. **Result:** The overall rate for neurological sequelae was 12.5%. Among the 56 patients who underwent Bidirectional Glenn Shunt, 7 patients had adverse neurological

outcomes. Four had generalized tonic clonic seizures, one patient had facial twitching, another had localized left sided seizures, and one patient had right sided weakness. The risk of having neurological sequelae was significantly greater in patients diagnosis of AVSD unbalanced. ($p = 0.038$). The other pre-operative and intra-operative parameters had no significant risk for neurological sequelae. **Conclusion:** The only factor predictive of neurological sequelae is the diagnosis of AVSD, unbalanced. The complexity of the cardiac lesion poses a higher risk for neurological sequelae because of the need for prolonged hypothermia.

PHC.R.022.10

The Association of QT Dispersion with the Development of Congestive Heart Failure in Post-Acute Myocardial Infarction Patients at the Philippine Heart Center

Rowena Tianero Rocha, MD; Sylvie Gunigundo MD; Ma. Belen Carisma, MD

Background: QT dispersion may be influenced by the extent of myocardial damage after myocardial infarction. On the premise that this scarred myocardium is a risk factor for the development of heart failure, the measurement of QT dispersion then can in a way be used to predict if patients post infarction would eventually go into heart failure. This study was conducted to assess the association of QT dispersion with the development of congestive heart failure in patients one year after acute myocardial infarction at the Philippine Heart Center from January 1, 2011 to March 31, 2012. **Methods:** This is a prospective cohort study involving adult patients admitted for acute myocardial infarction (ST or Non-ST elevation) at the Philippine Heart Center from January 1, 2011 to March 31, 2012 presenting within a week of symptoms. QT dispersion were determined from their first electrocardiograms and correlated with the development of heart failure using the Framingham Criteria one year after the event. **Results:** Eighty-nine patients were included in the study with a mean age of 56.30 ± 11.58 years. There was no association of QT dispersion with the development of heart failure one year after myocardial infarction. The different patient characteristics including co-morbid conditions showed no significant association with the development of heart failure after one year. Low ejection fraction and previous history cerebrovascular disease significantly correlated with adverse outcomes post MI (p value = 0.015 and of heart failure after one year was not associated with QT dispersion in post Myocardial Infarction patients. A longer follow-up period is thus recommended to better assess the association of QTd with heart failure.

PHC.R.023.10

The Association of Post-operative Glucose Levels with Clinical Outcomes of Cardiac Surgery Patients

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Background: Blood glucose levels are noted to significantly influence the outcomes of post-cardiac surgery patients in the immediate post-operative period. This prospective cohort study is aimed to determine the relationship of blood glucose levels and clinical outcomes of post-cardiac surgery patients at Philippine Heart Center recovery room/surgical ICU. **Methods:** We performed a prospective cohort study of cardiac surgery patients admitted at the recovery room/surgical ICU. Capillary blood glucose were measured in recovery room during the first 6 hours after cardiac surgery. Clinical outcomes were noted once patient is transferred to the recovery room/surgical ICU until patient is discharged. **Results:** 253 subjects were enrolled in the study. Blood glucose ranges from the 1st to 6th hour, with the positive outcomes having CBG range of 210.34 mg/dL (+ 87.296) to 300.45 mg/dL (+ 107.435), while those without the outcome were 196.72 mg/dL (+ 69.565) to 288.36 mg/dL (+ 93.788) respectively. **Conclusion:** This study showed no significant results in post-cardiac surgery patients with less intensive blood glucose levels.

PHC.R.024.10

Prevalence of Pulmonary Thromboembolism in Chronic Mitral Valve Disease with Moderate to Severe Pulmonary Hypertension at the Philippine Heart Center

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Background: Undiagnosed thromboembolism often leads to devastating complications, such as stroke, impaired cardiac contractility, pulmonary embolism and even death. Knowing the true prevalence of pulmonary thromboembolism among patients with mitral valve disease and pulmonary hypertension holds significant implications in the management of these patients. This study was done to determine whether high prevalence of pulmonary embolism do occur in patients with chronic mitral valve disease and pulmonary hypertension using clinical criteria (Wells clinical prediction rule) with CTPA. **Methods:** An algorithm with stepwise utilization of Wells criteria and CT pulmonary angiography (CTPA) was used for identification of all patients who participated at the Philippine Heart Center with pulmonary thromboembolism (PTE). All patients with low clinical probability of PTE using Wells Criteria were classified as PE unlikely or PTE negative and no further diagnostic exam for evaluation of PTE was done. Patients with high clinical probability of PTE were classified as PTE likely or PTE positive and were referred back to their attending physician or pulmonary service for further management. For patients with intermediate clinical probability of PTE, CT Pulmonary Angiography (CTPA) was performed. **Results:** There are 12.50% (15) who had intermediate probability Wells Score and 87.50% or 105 patients had low probability Wells Score. Among the fifteen patients, eleven of them underwent CTPA, results of which showed no filling defect, thus, negative results. The remainder was lost to follow-up. **Conclusion:** Among these groups of patients, there was no occurrence of pulmonary thromboembolism using Wells clinical prediction rule with CTPA.

PHC.R.025.10

Clinical Significance of Fasting versus Non-fasting Triglyceride Level as a Predictor of Major Adverse Cardiac Events (MACE) in Patients Treated with Percutaneous Coronary Intervention

Consuelo C. Tan, MD; Gilbert Vilela, MD

Background: Previous studies have shown that non-fasting triglyceride level is a more potent predictor of cardiovascular events than fasting triglyceride levels. This study aims to compare the clinical significance of fasting and non-fasting triglyceride level as a predictor of major adverse cardiovascular events (MACE) in patients treated with percutaneous coronary intervention (PCI). **Methods:** Adults undergoing PCI are enrolled in this study. Baseline fasting as well as non-fasting triglyceride levels were likewise obtained. The resulting non-fasting triglyceride levels was categorized into four, namely; <150 mg/dl; 151-199mg/dl; 200-499mg/dl; and >500 mg/dl. Subjects were followed up at 30 days and 1 year after PCI for the occurrence of MACE. Associations between the mean, as well as the different fasting and non-fasting triglycerides levels with the occurrence of MACE were determined and compared. **Results:** A total of 115 patients were enrolled in the study. MACE was observed in 34 patients (29.5% of the study population). Fifteen were noted among patients with non-fasting TGL level <150mg/dl; 8 were noted in the second quartile; 7 and 1 in the third and fourth quartile respectively. All of which are statistically insignificant. **Conclusion:** There is no association between the levels of non-fasting triglyceride levels and the occurrence of MACE among CAD patients who underwent elective PCI.

PHC.R.026.10

A Randomized, Placebo-Controlled Trial on the Effect of Allopurinol in Exercise Tolerance of Patients with Chronic Stable Angina at the Philippine Heart Center

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Background: Anti-anginal drugs focusing on its metabolic effects are not new. There are new evidences that xanthine oxidase inhibitor such as allopurinol is another potential drug that may have an anti-ischemic effect by reducing myocardial oxygen consumption and improving endothelial function. This study was set out to investigate whether allopurinol will improve exercise tolerance in patients with chronic stable angina at the Philippine Heart Center. **Method:** Twenty-nine adult patients with positive exercise tolerance test and chronic stable angina despite medications were recruited into a double-blind, randomized, placebo-controlled study. The

primary endpoint was the time to ST depression, and secondary endpoints were total exercise time and metabolic equivalent of task (MET). Fifteen patients were allocated to the allopurinol group and 14 patients were allocated to the placebo group. **Results:** There was no significant difference in the baseline and after treatment exercise tolerance, angina frequency, hematology and renal profiles. No significant difference was also seen in the metabolic equivalent (METS) achieved between groups and within groups. Those who were given allopurinol showed improved exercise performance and increased the time to ischemia during exercise treadmill testing however not significant probably due to a small sample size gathered. **Conclusion:** These observations showed allopurinol's potential as a therapeutic agent in patients with coronary artery disease, but more data are still needed to compare and contrast the use of allopurinol with other treatment options.

PHC.R.027.10

Mean Carotid Intima-Media Thickness Among Healthy Adult Filipinos

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Background: Carotid intima-media thickness (CIMT) is widely accepted as an independent marker for myocardial infarction and stroke risk 1acting as a surrogate marker for cardiovascular disease. There is note of variation in the CIMT values from one country to another, depending on the population characteristics. The study aims to develop a reference range of values of mean carotid intima media thickness of presumed healthy adult Filipinos. **Methods:** All asymptomatic adult healthy Filipinos from 45 to 84 years old with no clinical evidence of atherosclerosis included patients admitted for executive check- up, employees of the Philippine Heart Center and subjects from the communities surrounding the Center were included. The study was done from January 2011 to December 2012. **Results:** Mean left CIMT by age group is: 0.60 cm, 0.66 cm, 0.79 cm and 0.59 cm for 45-54, 55-64, 65-74 and ≥ = 75 years respectively. Mean right CIMT by age group is: 0.59 cm, 0.63 cm, 0.65 cm for 45-54,55 - 64,65-74 and ≥ =75 years respectively. Mean left CIMT among males is: 0.63 cm for 45-54 years and 0.62 cm for 55- 64, 0.67 cm for 65-74 and 0.68 cm for ≥ =75 years while the right CIMT along males is: 0.62 cm, 0.61 cm, 0.66 and 0.65 cm for 45-54,55- 64, 65-7 and ≥ =75 years respectively. Female subjects showed variation in mean carotid intima media with the left CIMT, 0.58 cm, 0.62 cm, 0.66 cm and 0.69 cm for 45-54, 55- 64, 65-74 and ≥ =75 years respectively and right CIMT; .57 cm for 45- 54 years, 0.63 cm for 55- 64 years, 0.65 cm and 0.64 cm for 65-74 and ≥ = 75 years respectively. **Conclusion:** The study demonstrated the mean level of carotid intima media thickness among presumed healthy Filipinos comparing the subjects according to age and gender.

PHC.R.028.10

The Accuracy of Chest Radiograph in Detecting Bronchiectasis with High Resolution Computed Tomography as Reference Standard

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Background: Chest radiography is the most readily available imaging modality in evaluating patients suspected with bronchiectasis. The aim of the study was to determine the accuracy of chest radiographs in detecting bronchiectasis using high resolution computed tomography (HRCT) as reference standard. **Methods:** This is a criterion based cross-sectional study. We compared the chest radiographs of 45 patients suspected with bronchiectasis with HRCT findings (using the criteria of Gudjberg and Naidich). We determined the sensitivity, specificity, positive predictive value and negative predictive value of chest radiographs in the detection of bronchiectasis. We also determined inter- and intra-observer variability determined. **Results:** The sensitivity of chest radiographs to detect bronchiectasis was 84% with a specificity of 64%. The positive predictive value was 65% while the negative predictive value was 84%. **Conclusion:** Chest radiographs can help out rule out the presence of bronchiectasis. A negative chest radiograph finding is a good indicator of the absence of bronchiectasis.

PHC.R.029.10

The Post-operative Echocardiographic Parameters of Pediatric patients with Ventricular Septal Defect with Aortic Regurgitation who Underwent Aortic Valve Repair at the Philippine Heart Center from January 2000 to July 2010

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Objective: To determine the immediate, short term, intermediate and long term postoperative echocardiographic profiles (Regurgitant Fraction of the Aortic Valve, LVEDD, LVESD, and LVEF) of patients with Congenital Heart Disease Ventricular Septal Defect with Aortic Regurgitation who underwent Aortic Valve Repair at the Philippine Heart Center from January 2000 to July 2010. **Methods:** A total of sixty (60) patients with CHD VSD AR underwent AV repair from January 2000 to July 2010. However due to unavailability of pertinent data in the patient's chart and Medtrak, only 38 subjects were finally included in the study. The actual patient's chart and Medtrak record were reviewed focusing on their respective echocardiographic profiles before and after surgery. **Results:** Majority of the subjects preoperatively had moderate AR at 58% followed by mild AR at 31% and moderately severe AR at 11%. Most of them are males at 66%. Majority had subpulmonic VSD at 60%, perimembranous type 31.5%. 60% had RCC prolapse followed by both RCC and NCC prolapse at 13.2%. Majority of the technique used in the repair of the aortic valve is the Trusler's technique (21%). During the immediate and short term post-operative course, there was a significant decrease in the baseline regurgitant fraction with a mean of 9.65 and 13.72 from a baseline of 24. In 5 subjects, their intermediate RF showed an increase to 24.40. Long term mean RF of 3 subject was at 19.33. The immediate LVEDD of the subjects post repair was at 3.83. The short term LVEDD was at 4.13. There was, however an increase in the LVEDD in the intermediate and long term phase at 4.8M and 5.12 respectively. The immediate LVESD of the subjects post repair was at 2.6. The short term LVESD was at 2.9. There was also an increase in the LVESD in the intermediate and long term phase at 3.1 and 3.5 respectively. The ejection fraction of the subjects did not vary considerably and remained normal from immediate until the long term post-operative phase. Among the 60 patient who underwent AV repair, 4 patients were reoperated and eventually had AV replacement. Timing of reoperation ranged from a minimum of 2 weeks post-operative to as long as 3 years post-operative. **Conclusion:** Trusler's repair is the most common technique utilized in AV repair and offers satisfactory immediate and short term results. The intermediate and long term result were however not satisfactory with results showing increase of RF, LVEDD and LVESD almost back to the baseline levels. The study also showed that the more severe the AR, the greater tendency for that to recur. Aortic Valve repair provided 93.3% freedom from reoperation ay 3 years old.

PHC.R.030.10

Burden of Smoking in Acute Coronary Syndrome

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Background: Cigarette smoking is known risk factors for a lot of illnesses, and one of which is acute coronary syndrome. The purpose of this study was to evaluate the burden of smoking among patients who had acute coronary syndrome seen at Philippine Heart Center in terms of its outcomes and expenditures. **Methods:** There are 236 patients (167 males and 69 females) that participated in the study. Smoking habits, comorbidities, GRACE and TIMI Scores were recorded. Financial data were gathered, tabulated and evaluated. Outcomes of ACS were tabulated in relation to patients' smoking history and were evaluated. **Results:** Of the 236 patients, 60% were direct smokers, 11% were passive smokers and 29% were non-smokers. There were no differences in terms of outcomes and length of hospital stay, ICU stays and need for mechanical ventilation. The hospital expenses excluding physicians professional fees for ACS patients who smoke (direct and passive) were PhP 42,797,085.96. The mean amount expended for each ACS person who smokes (direct and passive) was PhP 254,744.56. The mean hospital expenses of each ACS person who smoke (direct and passive) and died was PhP 588,167.69 + 292,522.37, while those ACS

patients who smoke and survived, the mean accumulated hospital expenses was PhP 219,647.39 + 246,546.83 (*p*-value of 0.000). **Conclusion:** In this study, it shows that among those patients who have acute coronary syndromes, predominantly were smokers comprising 72% of the total population, 60% were direct smokers and 11% were passive smokers. Serious adverse events were similar among those who smoke and non-smokers. In terms of direct hospital expenses, there were no significant difference between smokers and non-smokers, however there was a trend towards an increased hospital expenses among those who smoke and died. Therefore, smoking is still prevalent among patients who have acute coronary syndrome and with each admission, each patient expend a large amount of money for the health resources.

PHC.R.031.10

Association of Medical Research Council Dyspnea Scale to the Quality of Life Among COPD Patients

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Background: Medical Research (MRC) Dyspnea Scale, a reliable and valid measure of the level of physical activity that precipitates breathlessness, is a simple, quick, self-administered tool. St. George Respiratory Questionnaire (SGRQ) consists of 50 items divided into symptoms, activity and psychosocial impact. This study demonstrates the association between MRC Dyspnea Scale with the quality of life in COPD patients, providing clinicians with the ability to quantify and monitor the change in dyspnea in response to physical therapy interventions. **Methods:** Subjects were asked to complete a self administered Tagalog validated dyspnea scale using MRC Dyspnea Scale and SGRQ. Data was presented as means ± standard deviations. Patient characteristics were related to HRQL scores using linear regression and Spearman correlation. Separate, one-way analysis of variance was used to evaluate the association between MRC Dyspnea Scale and SGRQ. A *p*-value of less than 0.05 was considered significant. **Results:** A total of 153 patients were included in the study. Majority of the subjects were male, with mean age of 61.97 ± 5.64. All were smokers diagnosed to have COPD based on spirometry. COPD patients were subdivided on the basis of GOLD 2010. The association of MRC Dyspnea Scale with SGRQ level of quality of life was statistically significant (*p*-value = 0.000), with a mean of 1.50 for SGRQ level of ≤ 6 and a mean of 2.74 for SGRQ level ≥6. Association of MRC Dyspnea Scale with SGRQ with a correlation coefficient of 0.68 that was statistically significant (*p*-value = 0.000).There was a significant association between the mean SGRQ by MRC Dyspnea Scale (p-value = 0.000). As the MRC score is increased, so does the SGRQ level, signifying that increased breathlessness is associated with poor quality of life as seen by the patient's SGRQ score. **Conclusion:** MRC Dyspnea Scale Score has been shown to correlate well with the quality of life using St. George's Questionnaire, indicating its usefulness as a measure of quality of life and well being in patients with COPD.

PHC.R.032.10

Baseline High-Density Lipoprotein Cholesterol as a Predictor of Major Adverse Cardiac Events after Elective Percutaneous Coronary Stenting among Filipinos

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Background: Low HDL-c is common among Filipinos and this is inversely correlated with cardiovascular disease. A number of patients despite their low LDL-c (< 100mg/dL) would still have cardiovascular disease, probably due to unattend low HDL-c. Association between HDL-c and outcomes of coronary stenting particularly among Filipinos has not been evaluated. This study aimed to determine the association of baseline HDL-c levels to major adverse cardiac events at 1 month and 1 year after percutaneous coronary stenting among Filipinos. **Methods:** Adult patients who underwent elective coronary stenting were included in the study. Baseline demographic, clinical and angiographic variables were determined. Baseline lipid profile was taken. Association between baseline HDL stratified into low (<40mg/dL in men, <45 mg/dL in women) and high levels (≥40 mg/dl in men and <45 mg/dL in women) with MACE at 1 month and 1 year were prospectively determined. **Result:** A total of 126

patients were included in the study: 55 under the high HDL-c group and 71 under the low HDL-c group. The mean levels of HDL-c were 50 mg/dL and 34 mg/dL for high and low HDL-c group respectively. High HDL-c group was older, had lower triglyceride level, fewer smokers and had more LAD involvement. Both groups had similar events during the first 30 days post-stenting. However, the composite of MACE during the 31st day to 1 year was significantly higher in the low HDL-c group (5 (9.1%) vs. 13 (18.3%); p= 0.007) even after adjusting for baseline characteristics. This result was largely driven by acute myocardial infarction and stroke (9.8 vs. 1.8% and 8.5 vs. 5.5% for low and high HDL-c group respectively). **Conclusion:** Low baseline HDL-c (<40mg/dL in men, <45 mg/dL in women) is an independent predictor of major adverse cardiac events at one year among Filipinos who underwent coronary stenting.

PHC.R.033.10

Association of Adherence to American College of Cardiology / American Heart Association/ ESC 2006 Guidelines for the Management of Chronic Atrial Fibrillation on Stroke Prevention and Rate or Rhythm Control with Outcomes

Lala Ann F. Bambico, MD; Erdie Fadreguilan, MD

Background: Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia occurring in 1-2% of the general population. Proper diagnosis and treatment will benefit patients and will decrease hospitalization and mortality due to cardiovascular complications. Guidelines are present to help physicians in the management of AF. This study was done to determine the adherence of physicians to the ACC/AHA/ESC 2006 Guidelines for Chronic Atrial Fibrillation on Stroke Prevention and Rate or Rhythm Control with Outcomes. **Methods:** This is a prospective cohort study which included patients with documented chronic atrial fibrillation (AF) from July 2012 to July 2013 at the Philippine Heart Center. Each patient's characteristics were assessed to verify and confirm if the proposed strategy or principle based on the ACC/AHA/ ESC 2006 guidelines on chronic AF was applicable. The author investigated if the physicians adhered to the guidelines on stroke prevention and rate and rhythm management. The patient was followed up for 6 months. The association of adherence to outcomes such as mortality and hospitalization due to cardiovascular and non-cardiovascular causes were determined. **Results:** One hundred ninety-eight (198) patients were included in the study. The present analysis showed that the adherence rate of physician on the ACC/AHA Guidelines for AF on both anticoagulation and rate and rhythm control was 46.5%. The physicians adhered more to the rate and rhythm management at 74.24% compared to anticoagulation based on CHAD-S2 score at 51.5%. **Conclusion:** The adherence of physicians to the ACC/AHA guidelines to both anticoagulation and rate and rhythm control was only 46.5% which is considered quite low. Adherence to the guidelines did not affect the primary outcome of mortality but it has a significant effect on the secondary outcomes such as hospitalizations due to cardiovascular events.

PHC.R.034.10

Relationship of Peri-operative Serum Electrolyte Levels in the Development of Post-operative Arrhythmias Among Patients Who Underwent Open-Heart Surgery

Rovi Raymond Z. Enerva, MD; Erdie Fadreguilan, MD

Background: Abnormalities in cardiac rhythm are commonly observed in patients who underwent open-heart surgical procedures. One of the most frequent causes of these arrythmias is impairment in the serum electrolyte levels peri-operatively. The objectives of this study are to determine the critical level of serum electrolytes which predispose to the arrhythmias among post-cardiac surgery patients. **Methods:** We performed a prospective cohort study of patients who underwent open-heart surgery at the recovery room and surgical ICU. Serum electrolytes were obtained pre-operatively and post-operatively at the time of immediate arrival of the patient to the recovery room. They were observed for any arrhythmia occurrence for up to the 3rd day post-surgery. Electrolyte levels immediately preceding an arrhythmia were recorded. **Results:** Two hundred thirty patients

were enrolled in the study. The most commonly occurring arrhythmia identified was atrial fibrillation (AF) which has an incidence of 23%. The only serum electrolyte shown to have an association with the occurrence of arrhythmias was the postoperative potassium level which has a *p*-value of 0.003. **Conclusion:** Overall, this study did not show an established association between a critical serum electrolyte level and occurrence of arrhythmia among patients who underwent open-heart surgery.

PHC.R.035.10

The Correlation of the Burden of Smoking and COPD Severity Among Patient in Philippine Heart Center

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Backgrounds: Chronic Obstructive Pulmonary Diseases determined by the action of several risk factors by interacting among themselves in a significant way. The most important is cigarette smoking ranking at the first level for developing Chronic Bronchitis and Emphysema. This study looked into the relationship between COPD severity and smoking status based on the number of pack years consumed and on the cumulative years spend smoking. **Methods:** A cross-sectional study was done among COPD patients at the Philippine Heart Center, Division of Pulmonary and Critical Care Medicine from December 2010 up to December 2011. One hundred forty-nine diagnosed COPD patients were enrolled consecutively and was categorized according to the severity of COPD and severity of smoking. The total of cigarettes smoked (TACS) was calculated based on the multiplication of the number of cigarettes smoked per day by number of smoking days, after which the variables of total amount of cigarettes smoked was categorized by tertiles: lower, middle and upper. **Results:** Participants were categorized into one of four smoking status groups: non-smokers as the reference, smokers with lower, middle, and upper TACS respectively. Participants were also classified into three age groups: younger (35 to 49 years old), middle (50 to 64 years old), and older (65 years old and above). Occupation status were grouped into job 1 (farmer, factory worker, forestry worker, fisherman, and military person), job 2 (sales person, house worker, vehicle driver), and job 3 (office worker, teacher, doctor, retired, academic researcher and government officer). The questionnaires included general information such as age, gender, education level, occupation, member of family members, total monthly family income, body weight, height and specific questions, e.g. physical activity, alcohol drinking, and smoking. **Conclusion:** Univariate analysis showed no significant association between COPD severity and smoking status with a *p*-value of 0.28. Likewise, the duration of smoking and smoking and COPD severity were not significantly associated.

PHC.R.036.10

Cardiovascular Profile and Risk Factors of Filipino Patients with Infra-renal Abdominal Aortic Aneurysm at the Philippine Heart Center from January 2005 to March 2012

Paul Lucas, MD; Norberto Tuaño, MD

Background: Abdominal Aortic Aneurysm (AAA) is a disease that affects the aorta which leads to its dilatation and this is associated commonly with atherosclerosis. It has a high prevalence of rupture which is aggravated by risk factors. The aim of the study is to determine the cardiovascular profile and risk factors associated with infrarenal abdominal aortic aneurysm rupture among Filipinos seen at the Philippine Heart Center. **Methods:** This study conducted at the Philippine Heart Center is a case control study of 420 patients admitted for an infrarenal abdominal aortic aneurysm, ruptured or unruptured from January 1, 2005 to March 31, 2012. **Results:** More male patients (72.6%) were admitted with a mean age of 67 years old in the case group and 70 years old in the control group. The two groups had comparable characteristics of age and cardiovascular risk factors. Risk factors identified include hypertension, diabetes mellitus (DM), Coronary artery disease (CAD), Peripheral artery disease (PAD), Cerebrovascular diseases (CVD), and Chronic obstructive pulmonary disease (COPD) as well as family history of abdominal aortic aneurysm, smoking and alcoholic beverage use. Almost all patients received statins, ACE inhibitors and beta blockers. Leukocytosis as well as anemia

was found to be significant findings in favor for rupture of the aneurysm (p value =0.038 and 0.000 respectively). The type of the aneurysm is fusiform in majority of the patients. The size was 6.6cm in ruptured case group with a *p* value of 0.000. **Conclusion:** Regardless of ethnicity, race or body habitus or built, the size of the aneurysm still matters and there lies our decision for watchful waiting and observation or to do surgical repair.

PHC.R.038.10

Factors Affecting Spirometry Results in Patients with Valvular and Congenital Heart Disease after Cardiac Surgery

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Background: Long-term respiratory outcome after surgery is favorable, as pulmonary function actually improves after surgery. However, after surgery, FVC, FEV1 and MVV are all reduced below preoperative levels on discharge from the hospital, and after 3 months, all increased above preoperative levels, but remained below predicted values. The study will be conducted to document the effect on lung function post-surgery and to know the associated factors relating to lung function in valvular and congenital heart disease after surgery. **Methods:** Eligible subjects will be asked to sign an informed consent. Spirometry will be performed preoperative and post operatively at 1 month, 3 months and 6 months post surgery. The following parameters will be evaluated: forced vital capacity (FVC), forced expiratory volume in the first second (FEV1) and FEV1/FVC. Factors that could affect post operative PFT results of patients will be determine in the study. **Results:** FVC was significantly reduced in the preoperative period in all patients. There was a tendency of the values to slightly improve one month after surgery. There was also significant improvement of lung function 3 months after. FEV1 was significantly reduced in all patients before surgery. At the first month post-surgery, there was a significant improvement of lung function and even much improved after 3 months post-surgery. The FEVI/FVC ratio was normal in all subjects. **Conclusion:** This study concludes that spirometry was impaired in patients with rheumatic heart disease and congenital heart disease and deteriorates after surgery but data showed that it improved one month after surgery.

PHC.R.040.10

The Accuracy of Chest Radiograph in Diagnosing Left Ventricular Systolic Dysfunction Using 2D Echocardiography as the Reference Standard

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Background: The chest radiograph is an affordable and accessible imaging modality which has been used in the past to evaluate the heart for the presence of disease but has taken 3 backseat in the recent years with the development of newer diagnostic techniques. Furthermore, most recent guidelines do not take a clear stand as to the position of the chest x-ray in patient management. Hence, the role of the chest radiograph in the diagnosis of left ventricular systolic dysfunction is now being investigated in this study. **Methods:** The chest radiographs of 187 patients were independently evaluated by 3 radiologists who were not aware of each other's reading and the 2D echocardiography results. The diagnosis as to the presence of pulmonary congestion and left ventricular dilatation (LVD) was made from the consensus reading of the 3 radiologists. These results were then correlated with left ventricular systolic dysfunction by 2D echocardiography. The sensitivity and specificity results as well as the negative and positive predictive values, kappa and p-values of the chest x-ray findings for the diagnosis of left ventricular systolic dysfunction were determined. **Results:** Among the 33 subjects who had radiographic left ventricular dilatation and pulmonary congestion, only 3 of them actually had left ventricular systolic dysfunction 011 2D echocardiography [Sn= 18.7, Sp= 52.6, PPV=3.6, NPV= 87.4, p- value= 0.17). Of the 35 subjects with LV dilatation on chest x-rays, 7 had LV dysfunction by 2D echocardiography (SN=70.0, Sp=72.0, PPV=16.7, NPV=96. .8, p- value= <0.01). On the other hand, only 3 patients with pulmonary congestion on chest radiograph were diagnosed to have LV dysfunction by 20 echocardiography (Sn= 50.0, Sp= 84.9, PPV= 15.8, NPV= 96.8, *p*-value =

0.02). Remarkably, 90 of the 93 patients who neither had LV dilatation nor pulmonary congestion by chest radiographs were also negative for LV dysfunction by 2D echocardiography. **Conclusion:** The chest x-ray is a reliable modality for establishing the absence of left ventricular dysfunction. However, it is not a very good screening tool since the presence of radiographic left ventricular dilatation and/or pulmonary congestion has low sensitivity in detecting LV systolic dysfunction.

PHC.R.041.10

Correlation of Electrocardiographic and Echocardiographic Findings on RV Size Among Children with Atrial Septal Defect

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Background: Classic findings on ECG of children with ASD include prolongation of P-R interval, P wave and QRS duration with a shift of the QRS axis towards the right quadrant. Recently, clinical study on ECG of patients with ASD showed findings of the "crochetage pattern," a notch on R wave on the inferior limb leads with high specificity for ASD. The purpose of this study is to correlate these ECG findings with echocardiographic RV volume and ASD size.The ECG is a potentially valuable adjunct to the physical examination in differentiating children with ASD from those with an innocent murmur in the primary care setting in the provinces where 2D Echo is neither available nor affordable. **Methods:** Included in the study were children diagnosed by 2D Echo to have ASD Secundum Electrocardiograms within 6 months of the latest 2D Echo were compared. ECG tracings of qualified children will be reviewed. Parameters measured were: P-R intervals presence or absence of Crochetage pattern in inferior limb leads. Echocardiographic tapes of children who satisfied the inclusion criteria were retrieved and reviewed with emphasis on the size of atrial defect and right ventricular end diastolic volume (EDV). Presence of RVOTO of less than 30 mmHg was considered as secondary to increased pulmonary blood flow and was included in the study **Results:** Sixty five (65) subjects included in this study with confirmed ASD by echocardiography. The mean age was at 8 years old. Majority of the subjects were female (74%), while the male subjects were at 26%. 2DEcho of the subjects reviewed showed mean RV end diastolic volume was 45 ml, with a mean size of atrial septal defect of 1.7 cm. ECG findings showed 26% of ASD patients had Crochetage pattern in one inferior lead alone and 32.3% in those with two to three inferior limb leads, with a total of 58.4% of the subjects with ASDs. RV end diastolic volume showed significant correlation with the ASD size and PR interval. Same significant finding was noted comparing RV EDV and PR interval with the ASD sizes. Presence of crochetage has significant correlation with the PR interval at 0.05 levels in 2-tailed analysis. **Conclusion:** The finding of a crochetage pattern may serve as a readily available ECG marker to motivate the search for ASD patients. Future prospective studies with larger number of ASD patients are needed to establish the greater correlation of crochetage to ASD Echocardiographic findings in the general population.

PHC.R.042.10

Comparison Between the NERS (New Risk Stratification) Score and the SYNTAX (Synergy Between Percutaneous Coronary Intervention With Taxus and Cardiac Surgery) Score in Outcome Prediction for Patients with Coronary Artery Disease with Triple Vessel Disease who underwent PCI

Eleazar P. Daet, MD; Rhandy Panganiban, MD

Background: Numerous different models have been developed for risk stratification. One of the scoring systems used is the SYNTAX (Synergy between Percutaneous Coronary Intervention with Taxus and Cardiac Surgery) score which has shown to be an independent predictor of MACE in patients with triple vessel disease treated with angioplasty. However it does not comprehensively incorporate clinical variables, hence it is compared with novel scoring System NERS (New Risk Stratification) score which has clinical, procedural am angiographic indices. This study was done to compare the SYNTAX and NERS scoring system in terms of sensitivity and specificity in predicting outcome of patients with triple vessel disease who underwent PCI **Methods:** All eligible patients diagnosed with

Coronary Artery Disease with triple vessel disease who underwent angioplasty were included. Risk scoring system was done using SYNTAX and NERS score. Phone interviews were conducted and at the end 6 months, to determine the occurrence of the major adverse cardiac events (MACE), encompassing myocardial infarction, all cause death and target vessel revascularization. The two scoring system was compared. **Result:** Seventy-eight patients were included in the study. SYNTAX score was divided into low risk group (<34) and high risk group (≥34). Ninety seven percent belong to low risk group while 3% belong to high risk group. The NERS score was also divided into le w risk group (<25) and high risk group (≥25). Ninety two percent belong to low risk group while 8% belongs to high risk group. In terms of MACE (major adverse cardiac events (MACE), encompassing myocardial in farction, all-cause death, and target vessel revascularization, there was 6.4% on both scoring group. The SYNTAX score has 0% sensitivity, 97.3% specificity, 0% positive predictive value, 93.4% negative predictive value, kappa value of -0.038 ± 0.101 and *p* value of 0.646. The NERS score has 20% sensitivity, 93.2% specificity, 16.7% positive predictive value, 94.4% negative predictive value of 94.4%, kappa value of 0.120 ± 0.113 with *p* value of 0.143. **Conclusion:** Both SYNTAX scoring and NERS scoring did not differ significantly in terms of prediction of MACE in patients with triple vessel disease who underwent angioplasty. NERS scoring showed better predictive value but larger population and longer follow-up is needed in order to confirm these findings.

PHC.R.043.10

Association Between Peri-operative Routine Platelet Transfusion Practice and Mortality during Open Heart Surgery in Philippine Heart Center: a Retrospective Study

Mea Lovella B. Clara, MD; Luis Raymond T. Go, MD

Background: There is noted reduction of platelet count during heart surgery because of hemodilution and consumption on cardiopulmonary bypass circuit. As the bypass time lengthens, thrombocytopenia will progress. The objective of this study is to determine the morbidity and mortality of patients during routine and non-routine platelet transfusion in heart surgery at Philippine Heart Center. **Methods:** A retrospective chart review was done in the medical records of Philippine Heart Center. Subjects were grouped into those who were given platelet transfusion routinely (routine group) and those who were given platelet transfusion according to STS guidelines (non-routine group). The outcomes were noted: prolonged RR and SICU stay, bleeding, infection, stroke, myocardial infarction and hospital mortality. **Results:** A total of 187 charts (140 in the routine group, 47 on the non-routine group) were reviewed for this study. The demographic profile of both groups did not significantly differ. Fifteen patients had prolonged RR stay and two patients had prolonged SICU stay under the routine group, while, three patients had prolonged RR stay into the non-routine group. Major bleeding was noted in four patients from the routine group, with none in the non-routine group (p=0.574). Infection seen in both groups was predominantly in the routine group. Postoperative stroke is higher in the routine group. Two patients died in the routine group and one died in the non-routine group. Analysis of the overall adverse outcome showed no statistical significance with a p-value of 0.626. **Conclusion:** This study showed that routine platelet transfusion following heart surgery did not statistically provide a favourable clinical outcome compared to non-routine platelet transfusion. Routine platelet transfusion therefore is not indicated following cardiac surgery and the practice should be avoided or abandoned since it only increases the cost of care. A prospective randomized study is needed to further validate this finding.

PHC.R.044.10

Determinants of Outcome in Neonates Undergoing Modified Blalock-Taussig Shunt: a Philippine Heart Center Experience

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Background: Systemic pulmonary shunt is a widely accepted form of palliation for neonates

with congenital cyanotic heart disease. The purpose of this study is to review our experience of Modified Blalock-Taussig shunt in neonates and to identify factors determining the outcome after surgery. **Methods:** From January 2005 to August 2010, the medical records of neonates with cyanosis and severely decreased pulmonary blood flow and who underwent MBTS were reviewed. Demographic, clinical and intraoperative parameters were assessed. Mortality rate was determined. **Results:** The mean age was 13 days (range 2-30); mean weight 3.089 $\pm$ 0.627kg (range 1.7-4.3 kg). The MBTS was performed in 34 patients via midsternotomy and left thoracotomy in 2 patients. The mortality rate was 18 patients (50%). Analysis revealed that duration of operation in hours of 3.270 $\pm$ 1.434 (*p*-value0.041) and postoperative 0_2 saturation of 78.76 $\pm$ 11.470 (*p*-value 0.006), were considered to be early predictors of mortality. **Conclusions:** Modified Blalock-Taussig shunt remains to be an effective palliative measure in neonates with congenital cyanotic heart disease. In our study, both the prolonged duration of operation and low post-operative 0_2 saturation present as a risk factor for early mortality.

PHC.R.046.10

A **Validation Study on Bedside Estimation of Risks as an Aid for Decision Making in Valve Surgery at the Philippine Heart Center: a Prospective Cohort**

Kristine C. Somintac, MD; Santos Jose Abad, MD

Background: Valve surgery accounts for one of the most complicated open heart procedures given its chronicity, complexity and regardless of its etiology. Potential risk variables that affects the outcome after valve surgery was previously identified by a local study. We conducted this study to validate this bedside estimation of risks as an aid for decision making in valve surgery. **Methods:** We conducted a prospective validation study of a bedside risk stratification for valve surgery. We obtained clinical and echocardiographic parameters per subject and followed up each subject post-valve surgery to determine their outcomes. We stratified each subject using the nine component risk variables scores and categorized them as low, moderate, high and ultra high risk for valve surgery. We determine the association of the risk score with in-hospital mortality. **Results:** We included 212 adults who met the eligibility criteria for this study. Most cases are under private category (81.6%), scheduled for elective surgery (99%), in sinus rhythm (59.9%) and in NYHA functional class II (88.2%), and with a slight female predominance (55.2%). Among the risk variables analyzed, the preoperative cardiac rhythm, NYHA FC, age, creatinine and PTPA levels were identified as those that significantly affects in-hospital mortality following valve surgery. A cut-off risk score of 9 and above provides good sensitivity of 77.8% and specificity of 90.6% in predicting in hospital mortality after valve surgery. **Conclusion:** Using bedside estimation of risks as a tool among patients undergoing valve surgery is relatively cheap and cost effective since significant parameters are readily available upon admission. This method of predicting in hospital mortality will not only provide the surgeon or attending physician of the potential risk of each patient undergoing the procedure but also as a preoperative risk awareness of both patient and his or her relatives of the possibility of mortality of the patient who will be subjected to valve surgery. However, it is suggested that a higher number of subjects be included to increase the sensitivity of the risk scoring.

PHC.R.049.10

Off-Pump Glenn Shunt, the Philippine Heart Center Experience: a case series

Ramiro Thadeus P. Pablo, MD

The bidirectional Glenn shunt has been widely used as a palliative procedure for congenital heart diseases, such as single ventricle anomalies. The original glenn shunt was done without the use of the cardiopulmonary bypass machine, however, today it is commonly done "on pump". With the use of CPB are the inherent risks (e.g. bleeding) and added costs. We review cases of off-pump glenn shunt done in our institution, and discuss the outcomes of these patient. We also review the technique of operation in our institution. With the positive outcomes in our patients, we propose that the procedure be done off-pump in carefully selected patients. We also give our recommendations on additional monitoring strategies for patients who

will undergo the procedure.

PHC.R.001.11a

Comparison of International Normalized Ratio (INR) between Point-of-Care Testing Analyzer Coaguchek XS and Standard Laboratory Method Among Patient on Warfarin

Spencer S. Watanabe, MD; Frederick R. Llanera, MD

Background: Point-of-care testing of INR gives quick results that are especially useful in emergency settings; however, results from this modality should undergo further evaluation. This study aims to determine the accuracy of international normalized ratio (INR) by point-of-care testing analyzer as compared with standard laboratory method among patients under anticoagulant therapy with warfarin. **Methods:** INR results from the point-of-care testing analyzer were compared with those from the standard laboratory method. The INR was tested simultaneously in whole blood and plasma samples. The INR values obtained by the different methods are compared by analysis of variance for repeated measures. Correlations between 2 parameters were evaluated by the Pearson correlation and the Spearman nonparametric method. The 95% confidence intervals were also determined. **Results:** A total of 169 paired results were obtained during the final collection. The point-of-care analyzer INR values have significant correlation (r=0.97, *p*- value=.007) with the standard laboratory method INR values. 160 out of 169 (95.7%) paired samples are within 0.5 INR unit of each other. However, the point-of-care testing analyzer usually underestimates the INR, relative to the standard laboratory method, at values greater than 3.5. **Conclusion:** INR measurements obtained in POC testing show an acceptable level of accuracy against values on the same samples obtained in standard laboratory method. Al though the POC testing INR analyzer has a tendency to underestimate INR values that fall on higher range, its benefit of providing a fast and accurate INR especially in emergency settings considerably outweighs this limitation.

PHC.R.001.11b

Off-pump Coronary Artery Bypass Surgery for Left Main Coronary Artery Involvement

Bernard M. Baluga, MD; Avelino L. Aventura, MD; Lorenzo Rommel G. Cariño, MD; Renato Villanueva, MD

Background: The presence of significant left main coronary artery stenosis (≥50%) has been considered a relative contraindication to the use of off-pump coronary artery bypass (OPCAB) stemming from well-documented hemodynamic perturbations during the displacement of the heart. We examined patients with critical left main stenosis to assess the safety and feasibility of OPCAB in this group and to compare it to on-pump conventional CABG as to in-hospital mortality and morbidity. **Methods:** The study involved a cohort of data of patients from January 2006 to December 2012 in the Philippine Heart Center who were operated for left main coronary artery involvement via OPCAB or On-Pump CABG. Demographic data and patient characteristics were extracted from patient charts. Outcomes measured were rates of morbidity and mortality. **Results:** There were a total of 119 subjects enrolled in this study. Mean age of patientsin the off pump group is 60.8 ± 9.3 and with the on pump group is 63.1 ± 10.2. Infection rates were low (3.3% vs 3.4%). Occurrence of renal failure, cerebrovascular accidents, pulmonary complications and mortality were similar (*p* value 0.869, 0.107, 0.107 and 0.233 respectively). There was a significant difference in the length of hospital stay (11.2 ⊢ 3.82- vs 15.4 ⊢ 8.68 [*p* value- 0.0004]) and also with the occurrence of major adverse cardiovascular events [MACE] (10% vs 23.7% [*p* value 0.045]). **Conclusion:** Off-pump coronary artery bypass surgery offers equivalent outcomes for treating left main coronary artery disease compare with conventional on-pump coronary artery bypass. Our OPCAB procedures in this study suggest that LMCA lesions do not pose additional short term risk and can be performed as safe and effective as conventional on-pump coronary artery bypass.

PHC.R.002.11b

EuroSCORE and Cardiac Troponin as Predictor of Clinical Outcome After Valve Surgery

Melissa R. Cundangan MD; Normita Manapat, MD

Background: Risk stratification is essential in the practice of cardiac surgery. European system for cardiac operative risk evaluation (EuroSCORE) is a widely used pre-operative risk assessment tool which consider; preoperative risk factors. However, adverse intraoperative factors which may cause myocardial injury, may also contribute to the surgical outcome and they are not accounted for in this risk stratification tools. Cardiac troponin, with its high sensitivity and specificity of reflecting myocardial injury, maybe used as a biomarker to reflect intraoperative adverse effects on the myocardium which maybe correlated with occurrence of MACE. Therefore, combining the two will have a much more significant predictive accuracy in determining the probable outcome of valve surgery. This study aims to determine the accuracy of EuroSCORE with or without cardiac Troponin I in predicting outcome; of valve surgery. **Methods:** This study was a prospective cohort study conducted in Philippine Heart Center. Subjects were patients 19 years old and above who underwent elective single valve surgery covering the period of March 2012 to June 2013. The pre-operative clinical risk were evaluated using the EuroSCORE. Blood samples for cardiac Troponin I was collected 24 hours from the time that the patient is taken off from the bypass machine. Patients were followed up during immediate post-operative period, at 30 days, 6 months and until 1 year after surgery for the occurrence of outcomes like: 1. composite of cardiovascular related death, perioperative myocardial infraction and stroke; 2. occurrence of congestive heart failure requiring re-hospitalization and; 3. occurrence of death within one year after valve surgery. **Results:** Of the 43 subjects included, only 9 had events. Subjects with low risk EuroSCORE category have lesser development of adverse events (4.7%) as compared to the moderate risk group which comprise 6.3%. The subjects with MACE have a higher mean EuroSCORE (3.0 ± 0.71) than those without MACE (1.64 ± 1.3) with an odds ratio of 2.51 (p value of 0.014) and the troponin levels were all more than 3x elevated with a mean value of 3.19 ± 0.79 (95% CI 2.58 to 3.79). But in comparison to those without MACE, the troponin I level has a mean value of3.93 ± 5.51 (95% CI 2.01 to 5.86) with a *p* value of 0.688 which was not significant **Conclusion:** Pre-operative EuroSCORE is significantly correlated with occurrence of major adverse cardiovascular events after cardiac valve surgery. However, no correlation was seen with a single 24 hours post-operative troponin measurement with MACE and all cause mortality after single valve surgery.

PHC.R.003.11

Urine RBC and WBC Studies: a comparison between the manual method and the IQ200 Irish Automated Urine Microscopy Analyzer

Dinarazad D. Miranda, MD; Frederick R. Llanera, MD

Background: IRIS IQ200 Automated Urine Microscopy Analyzer has been very successful in utilizing their automation to advance productivity increases with clinical judgment. The technology of Iris IQ200 is based on image analysis software 9 Auto-Partcle Recognition or APR. The system is able with high confidence, to auto-classify into different categories particularly RBCs and WBCs. This study aims to determine the accuracy of IRIS IQ200 Automated Urine Analyzer in detecting RBC and WBC in urine analysis using manual microscopy as reference standard. **Methods:** The performance of IRIS IQ200 Urine Microscopy Analyzer in detecting RBCs and WBCs was evaluated. We randomly selected 245 urine samples which were analyzed using IRIS IQ200 and manual method to detect presence of RBCs and WBCs. **Results:** IRIS IQ 200 Microscopy Urine Analyzer generated a sensitivity of 97% in detecting RBC and 100% for WBC but has a low specificity in detecting WBC, which is 93%, as compared to RBC which is 97%. The false positive values (FPV) are somehow similar but the negative predictive value (FNV) the IRIS IQ200 Analyzer was 22% for RBC and 0% for WBC. Positive predictive value (PPV) for RBC is 63.2% and 75% for WBC. Negative predictive value (NPV) for RBC is 96.7% and 100% for WBC. The kappa values for both parameters are almost similar (0.532 and 0.545). **Conclu-**

sion: The ability of IRIS IQ200 in detecting RBCs and WBCs shows an acceptable level of accuracy and may prove useful in detecting RBCs and WBCs in routine urine analysis. But, there is still the need for an efficient technologist is necessary to ensure utmost result.

PHC.R.006.11

Association Between Peri-operative Routine Platelet Transfusion Practice and Mortality During Open Heart Surgery in Philippine Heart Center: a cohort study

Mea Lovella B. Clara, MD; Luis Raymond T. Go, MD

Background: Cardiopulmonary bypass (CPB) circuit will reduce the platelet count by 30-50%. As the bypass time lengthens, thrombocytopenia will progress. The objective of this study is to determine the morbidity and mortality of patients during routine and non-routine platelet transfusion in heart surgery at Philippine Heart Center. **Methods:** Patients admitted at the Philippine Heart Center from December 2010 to December 2012 who met our inclusion and exclusion criteria were included in this study. Subjects were grouped into those who were given platelet transfusion routinely (routine group) and those who were given platelet transfusion according to STS guidelines (non-routine group). The outcomes were noted during hospital stay: prolonged RR and SICU stay bleeding, infection, stroke, myocardial infarction and hospital mortality. **Results:** A total of 187 patients (140 in the routine group} 47 on the non-routine group) were included in the study. The demographic profile of both groups did not significantly differ. Fourteen patients had prolonged RR stay and 1 patient had prolonged SICU stay in the routine group} while, three patients had prolonged RR stay in the non-routine group. Major bleeding was noted in four patients from the group with routine platelet transfusion, with non in the non-routine group (p=0.581). Infection which includes pneumonia and wound infections, were seen in both groups} 33 patients in the routine group and 6 patient in the non-routine group (p=0.148). Postoperative stroke is the same n both groups. Six patients died in the routine group and one died in the non-routine group (p=1.000). Analysis of the overall adverse outcome showed no statistical significance with a *p* value of 0.103. **Conclusion:** The result of this study showed that a routine platelet transfusion did not statistically provide a position clinical outcome compared to non-routine platelet transfusion. Hence, the habit of routine platelet transfusion during coronary artery bypass graft in our center should be avoided. A prospective randomized study is needed to further validate this observation.

PHC.R.008.11

Mixed Venous Oxygen Saturation as a Predictor of Outcome Following Open Heart Surgery in Pediatric Patients with Congenital Heart Disease

Bernadette B. Valdez, MD; Ma. Bernadette A. Azcueta, MD

Background: Life-threatening complications are common after open heart surgery. It requires closer monitoring for early identification of problems and early intervention. Mixed venous oxygen saturation (SvO_2) is a direct measurement of the blended blood in the right ventricle, and it represents the end result of both oxygen delivery and consumption at the tissue level. If SvO_2 monitoring can alert clinicians to a change in the patient's condition sooner than traditional methods such as vital signs monitoring, then diagnostic and therapeutic decisions and interventions can be made earlier in the patient's clinical course. **Objective:** To determine the relationship of perioperative SvO_2 and outcome of pediatric patients with congenital heart disease (CHD) who underwent open heart surgery, and to determine the SvO_2 level that can be predictive of post-operative complications among these patients. **Methods:** This is a prospective cohort study of patients less than 19 year old, with CHD, who underwent open heart surgery from April 2012 to May 2013. SvO_2 was determined before cardiopulmonary bypass (CPB), after CBP, and after 1 hour at the surgical lCU. The relation ship of the different SvO_2 levels t the different variables and outcome were reviewed. **Results:** A total of 113 subjects were included. Sixty-one (54%) were acyanotic and 52 (46%) were cyanotic. The mean preoperative SvO_2 level of asymptomatic patients with acyanotic CHD is 85% and is 75% for cyanotic patients. The mean preoperative SvO_2 of

patients with comorbidity is 80% for acyanotic patients and 71% for cyanotic patients. The morbidity rate of patients after open heart surgery among patients with acyanotic CHD is 4.42%, and 23% among cyanotic patients. The mortality rate among patients who underwent open heart surgery is 1.8% for acyanotic patients and 0.8% for cyanotic patients. The SvO_2 level that is predictive of post-operative complications including mortality is <70% for acyanotic patients and < 66% for cyanotic patients. **Conclusion:** Results of the study showed that SVO_2 level at the surgical lCU significantly predicts complications after open heart surgery among pediatric patients with congenital heart disease.

PHC.R.010.11

A Comparison Between Insertion and Non-Insertion of Chest Tube After PDA Closure Among Pediatric Patients

Jetz-Marion P. Cruz, MD; Ramon O. Ribu, MD

Background: Patent Ductus Arteriosus (PDA) is a common congenital heart disease. While newer interventions have surfaced, surgery is still the mainstay of treatment. The approach is via a left posterolateral thoracotomy. The PDA is then ligated or transected. A chest tube has traditionally been inserted prior to chest closure. However, there has been an increasing trend in closing the chest without inserting a chest tube. Previous studies have shown this to be a safe approach. **Objectives:** This study compared the complication rates between inserting and not in serting a chest tube after PDA closure. **Methods:** This is a cohort study involving pediatric PDA closure patients. Patients included in the study were gathered from a chart review from 2005 to 2010 and a prospective cohort group from 2011 to 2013. All pediatric PDA patients who had isolated PDA closure via a thoracotomy approach at Philippine Heart Center were included in the study. There were grouped as follows: Group 1 with chest tube inserted and Group 2 - no chest tube inserted. Complications were recorded from both groups and complication rates were compared between the two groups. **Results:** A total of 169 patients comprised the study population, with 33 comprising the group where chest tubes were inserted after surgery (Group 1) and 136 comprising the group where chest tube insertion was not done (Group 2). Regardless of the type of closure, most patients (n = 136) did not have a chest tube at the end of the procedure. However, patients who were older tended to have a chest tube inserted for them at the conclusion. If the procedure (87±10 months vs. 45±3 months; p<0.001). Overall complications were more frequent in Group 2 (38 vs 23); however, in terms of complications needing intervention, Group 1 had two, while Group 2 had one. Length of stay in the intensive care unit was significantly shorter for the group without a chest tube (1.10±1.24 days vs 1.68± 1.27 days; p = 0.0169). Length of post-operative stay tended to be shorter for Group 2, but this did not achieve statistical significance (4.26±3.07 vs 4.30±2.44; p=0.0723). **Conclusion:** This study showed that, while not inserting a chest tube is associated with a number of complications and a relatively high complication rate, these complications were minor and did not entail further intervention. Also, not inserting a chest tube was associated with shorter ICU and hospital stay.

PHC.R.012.11

A Cohort Study on the Use of Absorbable Sutures versus Steel Wires in Sternal Closure in Pediatric Patients after Cardiovascular Surgery: a Philippine Heart Center Experience

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Background: Sternal closure after cardiothoracic surgery has traditionally been with the use of stainless steel wires. Various international papers have been published vouching for the comparability of absorbable sutures with regards to stability and complication rates. This alternative method of closure is being offered at the Philippine Heart Center although no study has been done to document the results, hence this paper came into creation. **Methods:** This is a cohort study on the incidence of complications of sternal closure among pediatric post cardiac surgery patients whose sternotomies were closed using the conventional wires versus those patients whose sternum were closed with polydioxanone sutures. **Results:** There were a total of 246 patients, with 82 the absorbable suture group and 164 in the wire group. There

was no significant difference in the gender distribution p=0.89. The wire group is heavier (p=0.01) and older (p=0.01) as compared to the absorbable suture group. The wire group has higher incidence of infections; however the results is not statistically significant (p=0.67). **Conclusion:** Sternal closure with absorbable sutures is a safe alternative to the traditional sternal wire closure, with comparable rates of complications between the two groups.

PHC.R.013.11

Correlation of CT-Scan Tracheal Parameters with Pulmonary Function Test in Patients with COPD

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Background: There have been conflicting results on the few studies done on the tracheal morphology and pulmonary function in COPD (chronic obstructive pulmonary disease) patients. This study aims to determine the correlation between CT scan tracheal parameters particularly the tracheal index and wall thickness with PFT (pulmonary function test) in patients with COPD. **Methods:** Fifty two patients with COPD who underwent chest CT scan and PFT were included in this study. The coronal length, sagittal length and wall thickness (WT) of the trachea were measured manually in orthogonal planes. The TI (tracheal index) was computed as the ratio of the coronal and sagittal lengths. Correlation of the CT tracheal parameters and the PFT variables was subsequently done. **Results:** There was no statistically significant correlation between the TI and WT with the PFT parameters particularly the FEV1 and FEV1/FVC pre- and post-bronchodilator values. **Conclusion:** Tracheal index and wall thickness showed no statistically significant correlation with the pulmonary function test in COPD subjects.

PHC.R.016.11

Correlation of Nutritional Status Using Subjective Global Assessment (SGA) on Pulmonary Function Parameters in Patients with COPD at the Philippine Heart Center

Cristito B. Alea, MD; Ma. Paz Mateo, MD; Teresita De Guia, MD

Background: Nutritional status greatly affects the patient. It plays an important part in the management of diseases especially among patients suffering from COPD and critically ill. Subjective Global Assessment is well validated screening tool for malnutrition. It has good correlation between subjective and objective measurements (convergent validity). It has also good predictive validity and interrater reproducibility. Patient is categorized as well nourished, moderate or suspected malnutrition and severe malnutrition. It is the aim of this study to determine the correlation of nutritional status using SGA on pulmonary function parameters of newly diagnosed and already diagnosed COPD patients according to GOLD criteria seen at the Philippine Heart Center **Methods:** This is a cross sectional study. Patients 40 years old and above diagnosed with COPD confirmed with Pulmonary Function Test (PFT) are included in the study. Nutrition I status was assessed using anthropometric indices such as weight, height, Body Mass Index (BMI), Mid Arm Circumference (MAC) and Subjective Global Assessment. Nutritional status was correlated with pulmonary function parameters obtained by the patients included in the study. Data was described as mean ± standard deviation or frequency and percent distribution. The association of anthropometric parameter with pulmonary function was determined using Pearson correlation analysis. Analysis of variance was used to determine relationship of malnutrition and pulmonary function. A *p*-value of ≤0.050 was considered significant. **Results:** One hundred forty-five CJPO patients participated in the study. Forced Vital Capacity (FVC) decrease as the patient became malnourished. The difference proved to be significant (p=0.000). Forced Expiratory Volume in 1 second (FEV1) showed the same significant decrease as the patient became malnourished (p=0.000). The FEV1/FVC ratio diminished from a well-nourished patient to a severely malnourished patient which proved to be likewise significant (p=0.000).Among the anthropometric measurements performed, weigh and mid arm circumference have positive correlation with FEV1 (r = -0.199, p=0.016; r = 0.366, p=0.000) and FEV1/FVC ratio (r= 0.267, p=0.001; r=0.29 3, p=0.00l). BMI was noted to be positively correlated with FEV1/FVC ratio (r = 0.293, p=0.00l). However, no correla-

tion was noted on both leukocyte count and albumin with PFT parameters. **Conclusion:** Nutritional status assessed using Subjective Global Assessment correlates significantly with FEV1, FVC, and FEV1/FVC ratio of COPD patients. Body weight, MAC and BMI were found to have positive correlation with PFT results of COPD patients. SGA, weight, MAC, BMI can be a gauge to monitor the severity of COPD without doing frequent PFT especially among difficult COPD patients.

PHC.R.017.11

Accuracy of Handheld Spirometry as a Comparable Diagnostic Tool to Pulmonary Function Testing

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Background: Assessment of patients with pulmonary illnesses requires objective measurement. However not all areas have standard pulmonary function testing. Portable electronic spirometers have been developed, but need further evaluation. The objective of this study is to evaluate the handheld spirometer as a diagnostic tool in comparison to standard pulmonary function testing. **Methods:** This is a cross-sectional study conducted at the Philippine Heart Center from January 2012 to March 2013. Patients 19 years old and above, who underwent standard pulmonary function testing were included. Patients were requested to undergo handheld spirometry upon their return. Results were interpreted independently. **Results:** A total of 395 subjects were included. There was a significant difference in the values of the FVC, FEV1 and FEV1/FVC between handheld spirometer and standard PFT (p 0.00). However, on diagnosis, there was good agreement between the two devices as to diagnosis of normal, obstructive and restrictive lung disease (kappa 0.984, p 0.008). There was also good agreement between the two devices as to classification of mild, moderate and severe for both obstructive (kappa 0.839 $\pm$ 0.044) and restrictive lung disease (kappa 0.898 $\pm$ 0.028). The handheld spirometer was noted to be accurate in diagnosing obstructive lung disease (kappa 1.0, sensitivity 100%, specificity 100%, PPV 100%, NPV 100%), but slightly less accurate in diagnosing restrictive lung disease (0.968, sensitivity 97.9%, specificity 100%, PPV 100%, NPV 95.9%). **Conclusion:** The values of FVC, FEV1 and FEV1/FVC obtained using the handheld spirometer may vary significantly from standard PFT, but the handheld spirometer can diagnose normal, restrictive and obstructive lung disease, and classify disease severity as to mild moderate and severe, with good agreement with standard PFT. The handheld spirometer was found to be accurate in diagnosing obstructive lung disease and slightly less accurate in diagnosing restrictive lung disease. It may substitute the use of standard spirometry in areas lacking standard PFT and also in patients with difficulty ambulating.

PHC.R.018.11

Evaluation of Properties of the COPD Assessment Test (CAT) vs. SGRQ in Predicting Severity of COPD by GOLD Criteria

Marie Grace Luancing, MD

Background: The COPD Assessment Test (CAT) was developed to assist patients and their clinicians assess and quantify the symptoms and impacts of COPD and enable better communication between patients and physicians about these consequences of their disease. It was already validated to other countries as well in the Philippines and also has strong correlation to SGRQ. **Methods:** The study was a cross-sectional, 254 stable COPD patient were included in the study. CAT and SGRQ questionnaires administered as random basis. Data was describe as mean ± SD or frequency (no.) and percent distribution. Kappa test was used to determine significance of agreement of cut-off points of scoring system with severity of COPD as diagnosed by spirometry. **Results:** The results obtained showed significant impairment in health status that was related to COPD severity. The COPD severity increases the CAT and SGRQ scores also increases significantly (CAT [p=0], SGRQ (p=0.00l)). However, there was no significant agreement of cut-off scores in CAT with COPD severity. (Kappa test: 0.17 p=0.009). **Conclusion:** CAT showed significant association in health related impact to COPD severity with good correlation to SGRQ scoring system.

PHC.R.020.11

Lung Flute in the Management of Pneumonia in Children

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Background: Community acquired pneumonia (CAP) is one of the most important health problems affecting children worldwide. Pneumonia is an inflammation of the lung parenchyma resulting in obliteration of alveolar air space by purulent exudates, due to an infectious agent most of the time and can also be caused by non-infectious causes. Lung flute is a device available; it is indicated for positive expiratory pressure (PEP) therapy which is part of the bronchial hygiene therapy. **Objective:** To determine the effectiveness of lung flute in the management of pneumonia in pediatric patients. **Methods:** This is an open labeled randomized controlled trial done at the Philippine Heart Center. Patients were randomized using block randomization, either to the standard therapy or the lung flute group. The standard therapy received antibiotics and bronchodilator if needed after which sputum induction was done and the exact amount of sputum and the quality of sputum W-1S assessed. The same procedure was done in the lung flute group except that they were instructed to use the lung flute. Assessment were based on resolution of fever, disappearance of crackles, improvement on chest x-ray, removal of oxygen support and hospital stay. Adverse events were also noted. **Results:** A total of 67 subjects were enrolled in the study. 34 under the standard therapy group and 33 under the lung flute group. Patients under the lung flute group were much older compared to the standard therapy. Among the factors analyzed, the sputum volume (0.9 ± 0.61) (p=0.063) and the quality of sputum (54.55%) (p=0.006) in the lung flute group showed significant results. No significant difference between the groups comparing the resolution of fever, disappearance of crackles, improvement on chest x-ray, number of hours oxygen removed and hospital stay was noted. **Conclusion:** Lung flute can be use a an adjunct in the treatment of pneumonia in children, helping the child to expectorate easily and aiding in the collection of sputum as a specimen for further diagnostic work-up.

PHC.R.021.11

Pulmonary Tuberculosis in Filipino Children with Congenital Heart Disease at Philippine Heart Center

Charo N. Francisco, MD

Background: Pulmonary tuberculosis is one of the primary causes of morbidity and mortality in children particularly those who are high risks particularly patients with congenital heart disease **Objective:** To determine the factors associated with pulmonary tuberculosis in Filipino children with congenital heart diseases (CHD) ages 2-18 years old in a tertiary subspecialty hospital. **Methods:** Tuberculin skin testing, chest x-ray, sputum Acid Fast Bacilli (AFB) smear and TB Culture were done. They were classified based on the Philippine Pediatric Society TB Concensus as to: TB negative, TB exposure, TB infection and TB disease. The following variables were included: age, sex, socioeconomic status, nutritional status, presence of a BCG scar, New York Heart Association (NYHA) classification, exposure with smoker, exposure to a known TB disease, hematocrit level, oxygen saturation, presence of pulmonic stenosis, pulmonary artery hypertension and presence of other comorbidities. **Results:** There were 237 patients, 137 of whom were cyanotic and 97 patients were acyanotic. Majority of patients with TB disease were cyanotic and Tetralogy of Fallot (TOF) has the most number of cases. Age and exposure to a known TB disease were significant for both. The following factors were considered significant (p=<0.5) in the development of tuberculosis in cyanotic CHD: presence of BCG scar (p=0.004) and exposure with a smoker (p=0.000). For acyanotic type, presence of pulmonic stenosis and pulmonary artery hypertension (p=0.000) were significant. **Conclusion:** The presence of increased carbon dioxide tension in cases of cyanotic CHD makes them prone to pulmonary tuberculosis and explained that the organism not just grow and multiply in the presence of increase oxygen content.All patients with CHD must be screened properly for tuberculosis since it increases morbidity for patients undergoing corrective surgery.

PHC.R.024.11

Right Ventricular Strain Rates as Predictor of Outcome of Patients with Mitral Stenosis After Mitral Valve Surgery

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Background: Right ventricular function is an independent determinant of prognosis in patient with mitral stenosis, but its accurate quantification by echocardiography remains a challenge. Echocardiographic strain and strain rate imaging is a promising tool for the evaluation of myocardial function. The spectrum of potential clinical applications is very wide, due to its ability to differentiate between active and passive movement of myocardial segments, Hence this study was conducted to determine if strain and strain rate imaging of right ventricle, will predict outcome of patient with mitral stenosis after mitral valve surgery. **Methods:** Twenty-three patients with severe mitral stenosis admitted at the Philippine Heart Center who meet the inclusion and exclusion criteria were included in the study. Baseline clinical characteristics and echocardiographic data including right ventricle strain and strain rate variables were obtained prior to surgical intervention. Clinical outcomes during and after surgery such as death and cardiovascular events were determined. **Results:** There were no significant difference in global longitudinal strain and longitudinal strain of the right ventricle of those MS patient who died and those who survived Mitral valve surgery. RV strain (-7.2 ± 160 vs. -10.1±.941 with p value of 0.4113) and global strain rate of (0.57 ± 173 and 0.62 ± .208 with p value of 0.8550). Measurement were significantly lower in the mortality group but not statistically significant. **Conclusion:** This study showed that patient with mitral stenosis had lower right ventricular function. Strain and strain rate imaging can measure RV function, however, its use to predict the outcome in patient with mitral stenosis undergoing mitral valve surgery was inconclusive. Further study is recommended to determine its benefit.

PHC.R.025.11

Association of Non-alcoholic Fatty Liver Disease with Coronary Artery Disease

Jennifer Ann L. Cantre, MD; Noe A. Babilonia, MD

Background: Several risk factors for coronary artery disease (CAD) have been identified to guide physicians in preventing disease occurrence and managing disease progression. A novel factor considered to have significant risk in developing CAD is the non-alcoholic fatty liver disease (NAFLD). Only a limited number of studies regarding association of NAFLD with presence and severity of CAD are available. The objective of this study is to determine the association between non-alcoholic fatty liver disease and presence of significant CAD. **Methods:** Patients admitted for coronary angiography underwent periprocedural liver ultrasound. Angiography results were subjected to Gensini scoring for severity determination. Results were subjected to descriptive statistics, *T*-test and logistic regression analysis. **Result:** Ninety-one participants (males and females) who underwent coronary angiography at the Philippine Heart Center from October 2012 – March 2014 were included. Univariate analysis revealed that age, male gender, waist-to-hip ratio, diabetes mellitus, hypertension, smoking history, and the presence of NAFLD were significantly related to the presence of coronary artery disease on angiography. This study, however, showed that although there was a trend in the relationship between the presence of CAD and the finding of NAFLD on ultrasound it was not statistically significant. **Conclusion:** This study was able to show that the finding of NAFLD on ultrasonography was related to the presence of CAD on angiography although statistical significance was not achieved. It was, however, also noted that despite the trend towards an increased risk for CAD, the presence of NAFLD was not related to the severity of the CAD noted.

PHC.R.030.11

The Association Between Hypertensive Retinopathy and Coronary Artery Disease in Patients Undergoing Coronary Angiography

Desi James B. Ojascastro, MD; Ronaldo Estacio, MD

Hypertension silently damages the blood vessels and heart. As with any procedure, the decision to recommend cardiac catheterization is based n an appropriate risk/benefit ratio. Complimentary non-invasive tests, including fundoscopy, could prove useful in increasing the index of suspicion for coronary artery disease (CAD). The study aimed to determine the association between hypertensive retinopathy and CAD. This was a cross-sectional study conducted at Philippine Heart Center from January 2012 to March 2014, including hypertensive patients, aged 20-30 years, who underwent coronary angiography. Severity of CAD was determined by using the Gensini and the approach lesion score. Fundoscopy was done to determine presence of retinopathy. Patients with Type 1 or 2 Diabetes Mellitus or who had any contraindications to fundoscopy were excluded. A total 43 patients were included. Majority had a family history of HPN (74.4%), 62.8% were smokers or previous smokers. Only 41.9% had retinopathy (all being mild), 74.4% had evidence of CAD of varying severity, 4.7% had retinopathy although were negative for CAD, and 20.1% negative for both CAD and retinopathy. The computed p-value (0.08) showed no statistically significant correlation between retinopathy in predicting CAD, although once diagnosed with CAD, the Gensini score correlated positively with hypertensive retinopathy, those with retinopathy had higher Gensini scores (p-value 0.03 18), the approach lesion score for however showed insignificant correlation (p-value 0.5011). **Conclusion:** Hypertensive retinopathy is not associated with the likelihood of coronary artery disease. Although once diagnosed with CAD, those with concomitant retinopathy have more diffuse and severe coronary atherosclerosis.

PHC.R.031.11

Speckle Tracking Imaging Strain and Strain Rate as Predictors of Major Adverse Cardiac Events Among Patients with Stable Coronary Artery Disease (CAD) Who Underwent Percutaneous Coronary Intervention

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Background: The assessment of change in strain and strain rate using speckle tracking may be an important diagnostic tool in predicting major adverse cardiovascular event in patients diagnosed of stable coronary artery disease. **Methods:** Strain and strain rate using speckle tracking imaging were assessed among 32 patients (60 ± 8 years) with stable coronary artery disease before and 24-hours after treatment with elective percutaneous coronary intervention (PCI). The endocardial borders were traced in the end-systolic frame of the two-dimensional images from the 3 apical views. Speckles were tracked frame-by-frame through out the LV wall during the whole cardiac cycle. Basal, mid, and apical regions of interest were created. The remaining apical views were averaged to calculate global longitudinal strain (GLS). GLS was also calculated as the mean strain of 111 18 segments. In addition, wall motion scores were measured and scored as normal (score 1), hypokinetic (score 2), akinetic (score 3), or dyskinetic (score 4). Wall motion score index was derived as the average of the 16 segments. **Results:** An improvement in the systolic blood pressure, ejection fraction and wall motion score were noted post-PCI but did not reach statistical significance. The said improvement however failed to show correlation with the occurrence of major adverse cardiac event. Also, an improvement was noted on each patient's heart rate was noted but did not reached statistical significance and failed to demonstrate correlation with occurrence of major adverse cardiac event as well. **Conclusion:** In this study, assessment of change in strain and strain rate (whether improved or not) failed to predict occurrence of major adverse cardiac event.

PHC.R.032.11

The Association of Blood Uric Acid level with Endothelial Dysfunction in Patients with Peripheral Arterial Disease

Alano T. Olivas, MD; Ma. Teresa B. Abola, MD

Background: Hyperuricemia is strongly associated with endothelial dysfunction which is

common in peripheral artery disease (PAD). We hypothesized that endothelial dysfunction in subjects with PAD would correlate with uric acid levels. **Methods:** Hyperuricemia was defined as a serum uric acid concentration of >7.4 mg/dl in men or >6.2 mg/dl in women. Measurement of brachial artery flow-mediated dilatation (BA-FMD) was performed in 90 peripheral artery disease (PAD) patients using a high-resolution doppler ultrasound. The blood uric acid (BUA) level was measured using the uricase colorimetric method. The association of BA-FMD with BUA was determined. **Results:** Hyperuricemia was detected in 40% of our study population with the mean BUA of 6.8 ± 2.2. The mean age, BMI, waist circumference, and blood pressure was higher in the hyperuricemic group but it was not statistically significant. The prevalence of DM type 2 and history of smoking were also higher in the hyperuricemic group, but again, it was not statistically significant. The FMD values were positively associated with serum uric acid levels (OR = 0.59, p-value = 0.241) but not statistically significant. Multivariate logistic regression analysis showed that smoking was an independent determinant of endothelial dysfunction (OR hyperuricemia (OR = 0.6853, p-value = 0.73). **Conclusion:** Blood uric acid level is not associated with endothelial dysfunction which 6.301, p-value = 0.020) but not may be attributed to the following reasons: the technical aspects in BA-FMD measurement, the confounding variables not analyzed in this study such as lipid profile and creatinine level, and, the actual effect of uric acid to the endothelial function.

PHC.R.033.11

Factors Affecting Outcomes in Medically Treated Patients with Severe Aortic Regurgitation

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Background: Aortic regurgitation (AR) is the abnormal retrograde flow of blood through the aortic valve during cardiac diastole. AR causes a volume load of the left ventricle (LV). Chronic AR causes gradual left ventricular (LV) volume overload that leads to a series of compensasatory changes, including LV enlargement and eccentric hypertrophy. It is a slowly progressive disease with a long asymptomatic period and rapid deterioration when symptoms develop. Natural history studies have demonstrated the poor outcome of patients who have a low ejection fraction (EF) and chronic aortic regurgitation (AR) treated conservatively. **Methods:** This is a descriptive study design conducted at Philippine Heart Center. Patients with medically managed severe aortic regurgitation from 2002-2007 were identified. Patients with concomitant se ere valve lesions were excluded. Their charts will be reviewed and classified as to the confounding variables. Data were collected from the history, physical findings and results of 2D echocardiography. **Results:** Mean initial LVEDD is 6.64 cm ± 0.91 while the mean initial LVESD is 4.53 cm ± 0.91. The mean initial ejection fraction /as 58% ± 11. During the follow-up period of 3-8 years, there is a significant increase in the size of the LV with a mean increase of l.93 cm in LVEDD and 0.50 cm in LVEDD. The ejection fraction decreased by a mean difference of 3.03%. Male patients have a significantly higher rate of increase in LV size and decrease in EF compared to female patients. Medications improve LV function and decrease the rate of hospitalization. An increase in LV size and decline in EF was associated with higher rates of hospitalization but did not reach statistical significance. **Conclusion:** In patients with medically treated severe aortic regurgitation, male gender is associated with increased rate of LV enlargement and decline in EF. Although not statistically significant, medications can improve EF and decrease rate of hospitalization while progressive LV enlargement and decline in ejection fraction contributes to hospital admissions.

PHC.R.034.11

Predictors of Restenosis After Percutaneous Balloon Mitral Valvuloplasty

Raymund Darius Liberato, MD; Alexander Ang, MD

Background: Restenosis has been an anticipated occurrence after percutaneous transmitral commissurotomy (PTMC). Factors such as suboptimal valve area after the procedure and the presence of chronic atrial fibrillation predict a likelihood of restenosis. This study therefore aims to identify the clinical factors that contri-

bute to the development of restenosis, as local studies on adult Filipinos are sparse. **Methods:** This is a 10-year retrospective chart review of patients who underwent PTMC undertaken in a specialized tertiary hospital in the Philippines. A chi-square and *T*-test were applied to the data to determine the association of each individual factors and multiple logistic regression was applied to determine the independent effect of each factor. **Results:** Five hundred thirty five (535) charts were reviewed for 10 years. Of 535 charts, 206 were included in the study. Restenosis rate was computed at 19.42% in 10 years. Among the clinical characteristics, diabetes mellitus was linked with restenosis (p = 0.021). Further, the following were linked to restenosis: Wilkins score of >8 (p = 0.017), pulmonary hypertension prior to PTMC (p = 0.017 for mild, 0.018 for moderate, and 0.029 for severe), heart failure symptoms under NYHA functional class II classification (p = 0.026), prior AF (p = 0.019), and fusion of the anterolateral commissure (p = 0.003). Multiple logistic regression analysis showed relationship with restenosis with age [Odds ratio 1.04, p = 0.016 [95% CI (1.00-1.07)] and fusion of the anterolateral commissure [Odds ratio of 3.49 and a p = 0.012 [95% CI (1.31-9.24)]. **Conclusion:** There is a high likelihood of restenosis for patients after PTMC if the following are present: increasing age, diabetes mellitus, pulmonary hypertension, high Wilkins score, NYHA functional classification II, atrial fibrillation and fusion of the anterolateral commissures.

PHC.R.035.11

Predictors of Persistent Pulmonary Hypertension After Mitral Valve Surgery

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Background: Surgical repair of the valvular defect hence is done to prevent the progression of pulmonary hypertension; however, the regression of pulmonary hypertension after mitral valve surgery is often incomplete. This study aims to determine the predictors of persistent pulmonary hypertension in patients who have under gone mitral valve surgery. **Methods:** Patients with mitral valve disease with PAP >40mmHg who will undergo, 19 years and above were included in the study. Pre and post-operative (at 6 months) 2D echocardiogram were obtained from the patients to determine the presence of persistent pulmonary hypertension in the post-operative period, which was defined as absence of a decrease in the post-operative PAP. Differences before and after mitral valve surgery were examined. The different factors were examined and their association with persistence of pulmonary hypertension was analyzed. *T*-test and Fisher's exact tests were used to calculate the significance of the differences for the paired groupings. Probability values of p <0.05 were considered significant. **Results:** The study showed that majority of the patients who underwent mitral valve surgery had a decrease in the pulmonary artery pressure post-operatively. The presence of atrial fibrillation (p=0.04) and the right ventricular dimension were found to correlate significantly (p=0.008) with persistence of pulmonary hypertension. **Conclusion:** In the present study, doing mitral valve surgery in a patient with mitral valve disease even in those with severe pulmonary hypertension resulted in a reduction in the pulmonary artery pressure post-operatively regardless of the type of surgery and valve used as well as the size of valve used. Presence of atrial fibrillation and right ventricular dilatation relates with the persistence of pulmonary hypertension in the post-operative period even if there is no concomitant tricuspid regurgitation.

PHC.R.036.11

Factors Associated with Clinical Outcomes of Gravidocardiac Patients

Aida P. Maranian, MD; Myla Gloria S. Supe,MD

Background: Heart diseases are the most important non-obstetrical causes of maternal deaths during pregnancy however there are only a few data available on the course of pregnancy of gravidocardiac patients. It is the primary aim of this study to determine the factors associated with clinical outcomes or gravidocardiac patients. **Methods:** The study prospectively enrolled 47 gravidocardiac patients and documented the clinical outcomes of pregnancy. Baseline and follow-up data were obtained until

the end of pregnancy. The association of maternal characteristics to fetal outcome was determined. **Results:** Sixty-eight percent (68%) of gravidocardiac patients completed pregnancy and was able to deliver term live birth fetus with good Apgar score. The maternal cardiac event rate in the present study is 47% while unfavorable fetal outcome occurred in 38% of pregnancies. The present study reported that pulmonary artery pressure and right ventricular systolic function is significantly related to fetal outcome (p value =0.039 and 0.050). **Conclusion:** Gravidocardiac patients are at a higher risk for maternal and fetal complication. The results show that pulmonary artery pressure and right ventricular systolic function are associated with poor fetal outcome.

PHC.R.038.11

A Comparative Study of the Analgesic Efficacy of Intravenous Oxycodone versus Intravenous Tramadol in Preventing Postoperative Pain in Patients Undergoing Coronary Artery Bypass Grafting Surgery at Philippine Heart Center

Rosa Francia M. Manalaysay MD; Renato Pacis, MD

Background: Postoperative pain relief is one of the most important concerns for patients undergoing cardiac surgery and is one of the most clinically challenging for anesthesiologist. Traditionally, analgesia following cardiac surgery has been obtained with intravenous opioids. Tramadol is the most commonly used opioid for post-operative pain relief at our institution. Presently, no study has been conducted on the use of intravenous oxycodone in cardiac surgery for postoperative pain relief in our institution. Our objective is to compare the analgesic efficacy and compare the incidence of side effects of intravenous oxycodone versus intravenous tramadol in preventing pain in patients undergoing coronary artery bypass and grafting surgery. **Methods:** We conducted a randomized, double-blind controlled trial involving elective patients for CABG surgery under cardiopulmonary bypass. We randomized patients to receive either intravenous oxycodone 0.05 mg/kg IV bolus q8h or intravenous Tramadol 50 mg IV q8h with the first dose given upon arrival at the Surgical Intensive Care Unit (SICU). Pain was assessed using a Visual Analog Scale (VAS) before and after giving the doses of the test medications. Postoperative nausea and vomiting and all adverse effects were concomitantly registered with pain assessment. Continuous data was presented as a mean $\pm$ SD and is compared between groups using an independent *T*-test. Chi-Square tests were used for categorical data. Univariate analysis of variance was used in adjusting for the difference in the cardiopulmonary bypass time and aortic cross-clamp time between the two groups. VAS score is compared between groups for each parameter depending on time interval. **Results:** A total of 60 patients, 30 per group were enrolled in the study. Patients in the oxycodone group showed a superior pain relief compared with Tramadol before and after the 8th, 16th and 24th hour postoperatively (p value of 0.003-0.005). There were 2 cases (12.5%) incidence of vomiting in the Tramadol group and none in the Oxycodone group (p value of 0.492). There were no major complications that occurred such as respiratory depression, hypotension or pruritus during the whole study period. **Conclusion:** This study demonstrated that Oxycodone is superior than Tramadol in preventing post-operative pain in patients undergoing CABG surgery and that there was no significant difference in terms of the incidence of side effects.

PHC.R.039.11

Correlation of Left Ventricular Mass Between Quantitative ECG-gated Myocardial SPECT and 2-Dimensional Echocardiography

Arnel E. Pauco, MD; Myla Gloria S. Supe, MD; Jerry M. Obaldo, MD

Background: Left ventricular mass (LV mass) is an independent prognostic indicator of cardiovascular complications, and its regression due to therapy translates to positive clinical outcomes. Good correlation of LV mass between qualitative ECG-gated SPECT (QGS) and plain 2-dimensional echocardiography (2D-echo) has been published, and this study aims to verify if such relationship applies in the local setting. **Methods:** Forty-eight patients with normal myocardial perfusion SPECT and recent (within 30 days) plain 2D-echocardiograms (both done

in the Philippine Heart Center) were recruited, and the LV masses of the two modalities were compared using Pearson correlation. **Results:** Data showed a significant, but weak correlation ($y = 0.28x \pm 78.01$, $r = 0.53$, $p < 0.001$) between the LV mass of the two imaging modalities, which was also observed in the TI-201 group ($n = 45$; $y = 0.25x + 81.60$, $r = 0.48$, $p < 0.001$), but not in the Tc-99m sestamibi group ($n = 3$; $y = 0.47x + 46.11$, $r = 0.59$, $p = 0.601$). The mean LV mass by QGS (122.01 ± 24.57) is significantly smaller compared with the mean LV mass by 2D-echocardiography (156.41 ± 46.52), and the difference between the two procedures (mean ± SD: 38.15 ± 35.68, p<0. 001) is significantly different among all subjects, and in the TI-201 group. **Conclusion:** The LV mass generated by QGS correlates with 2D-echocardiograph estimations, but are statistically different, with QGS significantly underestimating the echocardiographic values. Post-hoc analysis showed no significant correlation of the LV masses in the non-hypertensive TI-201 sub-group due to relatively fewer non-hypertensive subjects. The use of TI-201 and the consequently low count, low resolution images in this study may have contributed to the disparity and relatively weaker correlation between LV mass by QGS and 2D-echocardiograph when compared with the published studies, which used radiotracers tagged with Tc-99m.

PHC.R.001.12

Prognostic Value of Coronary Flow Reserve by Dipyridamole Spect Sestamibi Imaging Predicting Future Cardiac Events

Deverly D. Tumapon, MD; Jerry M. Obaldo, MD

Background: Impairment of coronary flow reserve (CFR) precedes preclinical atherosclerosis. However, its prognostic utility using SPECT imaging is least explored. Thus, this study aimed to determine the clinical utility of CFR by sestamibi imaging in predicting future cardiac events in patients with normal and abnormal myocardial perfusion scan (MPS). **Methods:** This was a prospective cohort study of 54 consecutive patients who underwent 2-day protocol of dipyridamole Tc-99m sestamibi MPS with first-pass acquisition of the pulmonary artery. CFR was computed as quotient of myocardial blood flow (MBF) at stress and at rest. MBF was calculated from global tissue perfusion divided by arterial input function. All subjects were followed-up for any major adverse cardiac events (MACE) 4 to 17 months months after MPS (mean follow-up 9+3 months) through review of hospital record and phone interview. **Results:** Abnormal MPI revealed significantly lower CFR (1.64 ± 0.47 vs 1.19 ± 0.36 $p = 0.005$). In Kaplan-Meier analysis, patients with abnormal perfusion revealed significantly higher incidence of cardiac events compared with normal perfusion (chi-square 4.93, $p = 0.027$). While based on the CFR data, there was a trend towards increased incidence of cardiac events in patients with abnormal CFR; however, this did not reach statistical significance (chi-square 0.61, $p = 0.434$). **Conclusion:** With abnormal perfusion, there was significantly reduced CFR and higher incidence of MACE. Also, with abnormal CFR, a trend towards increased incidence of MACE was noted, noted, however, this did not reach statistical significance most likely due to short-term follow-up period.

PHC.R.002.12

The Association of Adult Cardiovascular Risk Factors for Coronary Artery Disease with Left Ventricular Mass Index and Left Ventricular Posterior Wall Diameter Among Filipino High School Students Ages 12 – 16 Years Old

Eloisa Victoria A. Claveria–Barrion, MD; Jhuliet J. Balderas, MD

Background: Prospective and retrospective studies have shown that CVD risk factors (obesity, lipid profile, unhealthy diets, and sedentary lifestyle) have their roots in childhood and tend to track into adulthood. Primary prevention and intervention through risk factor modification should be instituted in childhood. This study determined the individual risk factors in children affecting cardiovascular disease among adults, its' individual effect on the left ventricular mass index and left posterior wall diameter. Although a specific risk factor influences the risk that a person will have cardiovascular disease, risk factors tend to aggregate and usually appear

in combination. Furthermore, since clustering of risk factors is evident in childhood and persist into young adulthood, the presence of multiple risk factors could indicate the acceleration of cardiovascular disease into adulthood. A limited M-mode scan can be a cost effective procedure to evaluate for LVH. **Methods:** The study was conducted in a private and public heterogenous high school including 140 students' ages 12 -16 years old. All eligible subjects had complete physical examinations Body mass index were calculated. A questionnaire was given to the parents/guardians to answer. All eligible subjects underwent 2-dimensional echocardiography. Measurement of left ventricle was done using M-mode including left ventricular posterior wall thickness and left ventricular mass index. All study subjects underwent blood extraction for cholesterol, low density lipoprotein cholesterol, high-density cholesterol, triglycerides and blood sugar level 12 hours post prandial. **Results:** The mean age of the 140 subjects was 14 years old, where sixty nine (69%) were female. There were 27% that were obese. Twenty six students had high cholesterol and twenty three were positive for LDH. Triglycerides level was high among 29 students. There were 13 hypertensive and 3 with high fasting blood sugar level. Twenty percent of the population had sedentary lifestyle. Family history of the students revealed twenty seven percent with history of hypertension and ten percent had diabetes mellitus. Twenty six percent had family history of stroke occurring in less than 55 years old. An association of a single risk factor with left ventricular posterior wall diameter showed that hypertension is statistically correlated with the increase in left ventricular posterior wall at *p* value of 0.001. Students, who were obese, had increased incidence of thick left ventricular posterior wall at *p* value of 0.007. High cholesterol and high LDL-C level were both statistically correlated with increase in left ventricular posterior wall. In students with family history of stroke, there is a high incidence of having thick LVPW at *p* value 0.017. Three multi-risk combination can predict increase in left ventricular mass index and left ventricular posterior wall diameter these includes; obesity with hypertension and high LDL (*p* value of 0.001 and 0.000 respectively). Hypertension in combination with hyperglycemia and hypercholesterolemia can only predict increase in left ventricular posterior wall diameter (p-0.001). **Conclusion:** Due to increasing cardiovascular risk as low as 1 risk factor among Filipino children is correlated with increased left ventricular mass and left ventricular posterior diameter suggestive of increased risk of coronary artery disease in adulthood among children 12 years old and above. Cardiovascular risk is recommended for children 12 years old and above and 2-dimensional echocardiography be done for those with at least 2 risks factors. Lifestyle modification and diet should be advised to decrease adult onset coronary artery diseases.

PHC.R.003.12

The Association of Postoperative Hyperglycemia with Postoperative Infection Among Pediatric Patients Undergoing Open Heart Surgery

Emiliana A. Uniforme-Curameng, MD; Maria Dolores Victor, MD

Background: Severe hyperglycemia was associated with adverse outcomes after cardiac surgery. Whether intraoperative and postoperative glucose concentrations equally impact outcomes were unknown. The objective of this investigation is to determine whether postoperative hyperglycemia is associated with the development of postoperative infections in the pediatric cardiac surgery patient. **Methods:** One hundred seventy nine (179) pediatric open heart surgery patients ages 19 years of age or younger, were routinely evaluated for clearance prior to operation. The practice of giving pre-operative antibiotics was also observed. By mean of finger/heel pin prick, the 1 hour glucose level, the peak glucose level and the mean glucose level were recorded in the 1st 24 postoperative hours. Clinical symptoms were evaluated. Data were gathered based on the treatment of the sepsis work up such as urine culture, blood culture and chest x-ray and clinical symptoms postoperatively. **Results:** Results of the study showed that there was no significant association between postoperative hyperglycemia and postoperative infection. There was no significant difference noted in the first postoperative hour glucose, mean glucose level and peak glucose in the first 24 hours between patients with or without sepsis

and overall infection. However, we did find that patients who had peak glucose level in the first 24 hours more than 176 mg/dl had greater odds to develop pneumonia (Odds ratio 2.93, p = 0.03). Also, patients with mean glucose level more than 176 mg/dl is 2.09 times higher of developing any infection (Odds ratio 2.09, p = 0.03). **Conclusion:** Data from the present study does not support the need for strict glycemic control for children in the surgical intensive care unit post-cardiac surgery.

PHC.R.004.12

Correlation of Airway Wall Thickness with Pulmonary Function Test in Patients with Chronic Obstructive Pulmonary Disease

Neilson C. Tino, MD; Joseph Leonardo Z. Obusan, MD

Background: Thickening of bronchial walls is a result of airway remodeling in patients with COPD. These changes can be objectively measured using CT scan. The primary objective of this study is to determine the correlation between Computed Tomography scan measure of airway wall thickness and pulmonary function test in patients with COPD. **Methods:** Sixty-two patients diagnosed with COPD who underwent Chest CT scan and pulmonary function test were included in the study. The trunk of the right apical bronchus was identified and used since it is directly perpendicular to the cross section in a standard axial view. The Percentage Wall Area (WA%) and Bronchial Wall Thickness (BWT) were the parameters used as the measure for airway wall thickness. **Results:** No statistically significant correlation exists between airway wall thickness and snirometric parameters, particularly the FEV1 (pre and post) and FEV 1/ FVC (pre and post) **Conclusion:** Previous studies showed different results in the correlation of airway wall thickness and pulmonary function test. This study showed no statistically significant difference between airway wall thickness and pulmonary function test in patients diagnosed with COPD, which may have been greatly affected by technical difficulties in the measurement of airway wall and patient selection.

PHC.R.005.12

Correlation of Bronchial Wall Attenuation in Hounsfield Units with Pulmonary Function Test in Patients with COPD

Regina Cristina Q. Mangada, MD; Joseph Leonardo Obusan, MD

Background: Chronic obstructive pulmonary disease (COPD) is a combination of loss of elastic recoil, narrowing of small airways and remodeling. Morphologic features of bronchial wall in patients with COPD have been assessed using CT scan. Most imaging studies done used wall percentage area and luminal area. However, studies on bronchial wall attenuation in Hounsfield unit have been rare. This study aims to find a correlation between bronchial wall CT attenuation an pulmonary function in COPD patients. **Methods:** Eighty-one patients diagnosed with COPD who underwent chest CT scan and PFT on the same year and were included. Bronchial wall attenuation was measured and was correlated with PFT results and severity of COPD according to the GOLD criteria. **Results:** Most patients enrolled were male' with average age of 64 ± 11years old. Most of these patients are categorized as mild COPD with 38% and severe COPD. Patients classified as moderate COPD comprise 24% of the total population. There is significant moderate inverse correlation between bronchial wall attenuation and PFT results, FEVI ($r=-0.448$, $p<0.001$) and FEV1/FVC ($r = -0.374$, p value of <0.001). There is no significant correlation was derived between bronchial wall attenuation and severity of COPD according to GOLD criteria. **Conclusion:** Bronchial wall attenuation of the more proximal airways can potentially be used as a quantitative CT index of airflow limitation in patients with COPD as well as it severity.

PHC.R.006.12

Effects of Propofol Total Intravenous Anesthesia (TIVA) versus Combined Inhalational Anesthesia-propofol on Post-Operative Troponin Level and Clinical Outcomes Among Cardiac Surgery Patients Under Cardiopulmonary Bypass.

Felix Ruzen M. Fandinola, MD; Renato D. Pacis, MD

Background: Myocardial protection and clinical outcomes among cardiac surgery patients can be influenced by choice of anesthetic agents. The study compared whether combining inhalational anesthetics and propofol during cardiac surgery under cardiopulmonary bypass may be superior versus to total intravenous anesthesia with propofol by measuring post-operative Troponin I levels (primary outcome) and clinical outcomes. **Methods:** A prospective cohort study was conducted during a six month period in the Philippine Heart Center. A total of 102 subjects were included in the study: [Combined inhalational anesthetic plus propofol group (n=62), total intravenous anesthesia with propofol (n=40)]. Troponin I levels were obtained prior to and 24 hours post-operatively. Clinical data was gathered using a prepared information sheet. Patients were designated based on the anesthetic regimen used. *T*-test was used in comparing Troponin I levels among groups. **Results:** The study did not reveal any significant difference in Troponin I levels after cardiac surgery using either total intravenous anesthesia with propofol or combining volatile anesthetics with propofol. Similarly, no difference in clinical outcomes was observed as proven by all p values >0.05. Two clinical variables, NYHA functional class (*p* value 0.02) and intraoperative fentanyl consumed (*p* value 0.03) differed between the two groups. **Conclusion:** There was no significant difference in measured postoperative Troponin I levels and clinical outcomes between the two anesthetic regimens both anesthetic techniques are utilized during cardiac surgery with comparable outcomes. Further studies to evaluate the effects of anesthetic regimen used during cardiac surgery in the Philippine Heart Center is needed, ideally under more controlled and standardized conditions.

PHC.R.007.12

Association of Coagulation Test with Significant Postoperative Bleeding Among Pediatric Patients Undergoing Cardio-pulmonary Bypass

Rogelyn F. Tapuro-Olais, MD; Ma. Bernadette A. Azcueta, MD

Background: Excessive bleeding after cardiopulmonary bypass (CPB) continues to be an important cause of morbidity and mortality for both adult and pediatric population. **Objectives:** To compare the demographics and CPB characteristics of cyanotic and acyanotic patients; to determine the incidence of significant postoperative bleeding among pediatric patients with cyanotic and acyanotic heart disease undergoing CPB; to determine the association of PT, aPTT levels and platelet count with significant post-operative bleeding among pediatric patients with cyanotic and acyanotic heart disease undergoing CPB; 4) to determine the correlation of PT, aPTT levels and platelet count with blood product transfusion among pediatric patients with cyanotic and acyanotic heart disease undergoing CPB. **Methods:** Retrospective cross-sectional study was performed. The charts of pediatric patients who underwent elective open heart surgery from January 2010 to December 2011 were reviewed. Patients were divided into two groups-patients cyanotic lesions and patients with acyanotic lesions. The patients were categorized with significant postoperative bleeding based on their respective chest tube drainages recorded at the RR for 24 hours. The blood products transfused were noted. The PT and aPTT, and platelet count were noted. The cyanotic and acyanotic patients were evaluated separately. Pearson correlation was used to determine the relationship between coagulation tests with the amount of blood products transfused. A p-value <0.050 was considered statistically significant. **Results:** The study included 52 cyanotic patients and 57 acyanotic patients. There was 9.61% incidence of significant postoperative bleeding among cyanotic heart disease patients and 1.75% among acyanotic heart disease patients. Among the patients with cyanotic heart disease, the preoperative platelet count is correlated with the amount of platelet concentrate that was transfused with correlation coefficient of 0.802 with *p* value of 0.000. While in patients with acyanotic heart disease, both preoperative platelet count and amount of platelet concentrate that was transfused, preoperative aPTT and amount of transfused FFP are correlated with correlation coefficient of -0.409 and *p* value of 0.002 and 0.615 and p value of 0.03, respectively. **Conclusion:** There is higher incidence of significant postoperative bleeding in cyanotic patients. There is no significant difference in the levels of PT, aPTT and platelet count of patients

who had significant postoperative bleeding compared to those without significant postoperative bleeding, both in cyanotic and acyanotic heart disease. In patients with congenital heart disease, preoperative platelet count is correlated with the amount of platelet concentrate transfused but in patients with acyanotic heart disease, the preoperative aPTT is correlated with the amount of FFP transfused.

PHC.R.008.12

Relationship Between Nutritional Stats, Respiratory Symptoms and Lung Function in Elementary School Children in Both Private and Public Schools

Bernadette A. Nisperos, MD; Maria Dulce Requiron-Sy, MD; Maria Encarnita B. Limpin, MD; Milagros S. Bautista, MD

Background: Lung function tests is a measure of respiratory status. These tests were affected by factors affecting the growth and development in children and are influenced by age, sex, race, nutrition and socioeconomic status. **Objective:** To determine the relationship between nutritional status, lung function and respiratory symptoms of elementary school children enrolled in both public and private schools. **Methods:** This is a cross-sectional study done among elementary school children in both public and private school in Quezon City. School children ages 7-12 years old were recruited to participate in this study. Once informed consent was obtained from the parents and assent from the children, parent guardians were interviewed to elicit the respiratory symptoms of all subjects. The body mass index were also calculated to determine the degree of nutrition. All subjects underwent a pulmonary function test using a microloop. **Results:** A total of 161 patients were enrolled in the study. The study groups were divided into 3 main categories:, wasted and overweight. Different degrees of malnutrition have its effect on the pulmonary function tests. Both wasted and overweight groups showed significant decrease in FVC (p-value=0.0006) an FEV 1 (p-value= 0.0009). Both the wasted and overweight children were most likely to develop respiratory symptoms. Wasted children were found to be at risk of having restrictive lung function as well as obstructive ventilatory defect. **Conclusion:** We showed that the BMI has significant effects on all lung functions and the greatest effects were on the FVC and FEVI. The reduction in the lung volumes and flow rates could be due to their poor nutritional status. The wasted and overweight children had higher susceptibility to suffer from respiratory symptoms.

PHC.R.010.12

The Association of Exposure to Second-hand Smoke and other Social Factors to Tubercolosis in Filipino Children

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Background: Exposure to second-hand smoke is a major health concern worldwide. It predisposes the exposed child to a gamut of respiratory infections, including tuberculosis. **Methods:** This is a cross-sectional, analytic study done in three schools in the Philippines from October 2013-March 2014. Second I and smoke exposure, socioeconomic class and overcrowding status were asked. Tuberculin skin testing and chest x-ray were done on all patients. They were classified based on the Philippine Pediatric Society TB consensus to have TB exposure, TB infection or TB Disease. **Results:** A total of 130 students qualified or inclusion in the study. Fifty - seven out of the l30 subjects (44%) reported exposure to second hand smoke. Males, middle normal weight socioeconomic class. Overcrowding and public school students had more report of second hand smoke exposure. TB exposure and TB disease were seen with a higher prevalence among students exposed to second hand smoke but did not reach statistical significance. Belonging to the middle so socioeconomic class was statistically significant (p=0.034) to predict TB infection. Overcrowding is a factor for all outcomes of tuberculosis. **Conclusion:** There is a proportional percentage of Filipino children exposed to second hand smoke (44%). TB exposure and disease were more prevalent among those with second hand smoke exposure. Belonging to the middle socioeconomic class was considered significant (p= 0.034) in acquiring a TB infection. Overcrowding is a strong variable predisposing to tuberculosis.

PHC.R.011.12

The Accuracy of a Portable COPD Screening Device in Detecting Obstructive Airway Disease

James Albert A. Flores, MD

Background: Conventional spirometry as screening tool for early case finding of obstructive airway disease may be difficult and impractical. The Vitalograph COPD-6® is a portable spirometer that can help in the early diagnosis and could improve the clinical management of obstructive airway disease. It is the aim of this study to validate the use of Vitalograph COPD-6® spirometer in the out-patient department and in a community-based setting to facilitate the need for further testing with standard spirometry. **Methods:** A cross-sectional validation study of a portable COPD screening device in detecting obstructive airway disease, done at the Philippine Heart Center from March 2013 to December 2013. We screened 131 individuals with occupations deemed at higher risk of developing COPD (i.e. policemen, firemen, traffic enforcers, and/or jeepney drivers). Upon random selection one group underwent spirometry using the Vitalograph COPD-6® followed by standard spirometry, then the other group tested with standard spirometry prior to the portable spirometer. The following lung function parameters were measured FVC, FEV1, FEV6, FEV1/FVC ratio, and FEV1/FEV6 ratio with airflow limitation was clinically confirmed when the FEV1⁄FVC ratio value is <70 and FEV1⁄FEV6 ratio value is <0.70. **Results:** Standard spirometry diagnosed 43 subjects (32.82%) with an obstructive ventilatory defect with FEV1/FVC ≤70. Vitalograph COPD-6® diagnosed 38 subjects (29%) with FEV1/FEV6 ratios ≤0.70. In detecting an obstructive ventilatory defect or COPD with the Vitalograph COPD-6®, it has an 81.40% specificity and 96.59% sensitivity with a positive predictive value (PPV) of 92.11 and a negative predictive value (NPV) 91.40. **Conclusion:** The portable spirometer, Vitalograph COPD-6®, is a simple yet accurate device for the detection of obstructive airway diseases and may aid in the early detection of COPD hence early management.

PHC.R.013.12

Effectiveness of the Clinical Practice Guidelines Compliance on the Outcome of Patients Who Developed Hospital Acquired Pneumonia in the Philippine Heart Center

Ethel M. Cabrera, MD; Aileen Guzman-Banzon, MD; Maria Encarnita B. Limpin, MD

Background: Hospital Acquired Pneumonia (HAP) is the second most common nosocomial infection. Although HAP is not a reportable illness, available data suggest that it occurs at a rate of between 5 and 10 cases per 1,000 hospital admissions. The recent American Thoracic Society Guidelines[2] for the management of HAP serves as a framework for the practicing physician, treatment according to the local epidemiology, etiology and resistance patterns recorded per hospital is still considered. **Objectives:** The aim of this study is to determine the effectiveness of the Clinical Practice Guidelines compliance on the outcome of patients who developed Hospital Acquired Pneumonia in the Philippine Heart Center and to determine the incidence of HAP. **Methods:** All admitted adult patients were recruited once they meet the inclusion/exclusion criteria. Informed consent will be obtained from all subjects. Age, sex, smoking history, co-morbidities were obtained. Subjects were assessed daily from the third hospital day until discharge. They were assessed for the development of HAP. Compliance for the management of HAP using a checklist was determined. Included in the checklist are: Sputum GS/CS, Blood CS, CBC, CXR, use of appropriate antibiotics based on CPG. A score of 6 means good compliance while a score of <5 means poor compliance. **Results:** There were a total of 312 patients who developed hospital acquired pneumonia in this study. 190 were male and 122 were female. Mean age of the population with good outcome was 67 years old while 64 years old in those who had poor outcome. Among the accompanying co-morbidities, cardiac disease predominated the population study. The most common isolate in the blood and sputum culture of the subjects was Klebsiella pneumonia and Meropenem was the frequent antibiotic used. One hundred forty two patients were managed by the attending physician based on the CPC Guidelines of these

94 (54.97) had good outcome while 48 had poor outcome. The odds ratio of 2.33 signify that there is better outcome if attending physician adhere to the CPG Guidelines **Conclusion:** Compliance with CPG is associated with better outcome. Attending physician should comply on the CPG guidelines on the management of HAP to attain better outcome for patients' over-all well being and longevity of life.

PHC.R.015.12

Clinical and Procedural Outcomes of Patients Undergoing Coronary Angiogram Using Femoral versus Radial Access at Philippine Heart Center (PHC)

Irene L. Celedonio, MD

Background: Coronary angiography is frequently done using femoral approach at PHC for the past years. Newer approach such as radial artery is emerging in our institution but in developed countries this is the standard approaching doing coronary angiogram. This approach offers more advantages and feasible. Hence, clinical outcomes of these two approaches were studied at PHC. **Methods:** This is a prospective study done at Philippine heart center from May 2012 - October 2014. All of the subjects underwent coronary angiogram and access site was noted which depends on the operator's discretion. Subjects were excluded if they will undergo revascularization (within the same day up to 48 hrs). Primary outcomes were noted such as procedural success, crossover rate and complications during and after the procedure. Procedural time, contrast dye used, result and indications for coronary angiography were also included. **Results:** A total of 379 patients were recruited in the study. In both groups, the mean age is 56 years old and most were males. The most common co-morbid associated was hypertension 66.8% in the radial group and 64.6% in the femoral group (*p*-value 0.626). Majority of the subjects were on anti-platelet drugs with 74.9% and 83.9% in radial and femoral group respectively (*p* value 0.026). Procedural success was encountered more in the femoral group (97.9%) compared with radial group (87.4%), which is statistically significant (*p*-value <0.001). In addition, complications such as stroke and vascular complications were common in femoral group 1.9x, which is also statistically significant (p-value 0.046). **Conclusion:** This study found that femoral approach has a high procedural success but also increased odds of having procedural complications as compared to radial approach. Access site failure and crossover were frequently encountered in the radial group.

PHC.R.016.12

Diastolic Dysfunction as a Predictor of Outcome in post Myocardial Infarction Patient with Preserved Left Ventricle Ejection Fraction

Thessie Minelli O. Valdez, MD; Ma. Bridget Donato-Fernandez, MD

Background: Coronary artery disease is a major etiology of heart failure with preserved ejection fraction (EF). We therefore conduct this study involving patients with preserved systolic function after acute myocardial infarction to evaluate diastolic function as a predictor of outcome. **Methods:** One hundred fifty nine post myocardial infarction patients with preserved EF, with or without diastolic dysfunction were followed up for minimum duration of six months after the acute event. **Result:** Majority of the subjects were male (64.78%), with mean age of 61.25 ± 10, who suffered ACS, NSTEMI (47.17%), with hypertension (71.07%) and smoking (58.49%) as predominant risk factors. There were 70(44%) patients who developed major adverse cerebrocardiovascular events. Being a male gender, history of revascularization (either PCI or CABG) was 1.08 times higher of developing an outcome (*p*-value 0.82). **Conclusion:** The prevalence rate of diastolic dysfunction in post MI patients with preserved systolic function is 64.8% and among these patients, 47.57% developed MACE. Presence of diastolic dysfunction is 1.51 times associated with increased trend towards developing MACE (*p*-value 0.223).

PHC.R.019.12

Outcome of Pediatric Patients Who Underwent Tetralogy of Fallot Correction in Relation with the Surgical Technique Used in Relieving Right Ventricular Outflow Obstruction

Lorielyn G. Mandigma, MD; Ma. Bernadette A. Azcueta, MD; Jhuliet J. Balderas, MD; Corazon A. Estevanez, MD; Mercilyn Yap, MD

Background: Before the advent of surgical intervention, about 50% of patients with Tetralogy of Fallot died in the first few years of life. In the advent of surgical repair, which includes closure of the VSD and relief of right ventricular outflow tract (RVOT) obstruction has greatly improved the long-term survival of TOF patients. Potential complications have been reported in operated TOF patients if they remain asymptomatic. The objective of this study is to determine the outcome of pediatric patients who underwent tetralogy of fallot correction in relation to the surgical technique used in relieving right ventricular outflow tract obstruction (RVOT). **Methods:** In this prospective study, 63 patients who underwent Tetralogy of Fallot correction were included. Postoperative complications of residual pulmonary stenosis, pulmonary regurgitation, and right ventricle systolic and diastolic dysfunction were determined and analyzed in relation to the surgical technique used to relieve right ventricular outflow tract obstruction. **Results:** Residual pulmonary stenosis was observed on all patients for both groups. Right ventricular dilatation was still evident on most patients in both groups, with transannular patching group at 60.9% and pulmonary valve sparing group at 60%. RV systolic dysfunction was more common in transannular patching group, accounting for 56.5% of the group while in pulmonary valve sparing group, it was present in 19 patients, accounting for 25% of the group. RV diastolic dysfunction was present in 91.3% of transannular patching group and 85% in pulmonary valve sparing group. With regards to the distance travelled in 6 minute walk test, transannular patching group showed a mean of 297 ± 71.3m while in pulmonary valve sparing group, it was 215.3 ± 69.2 m. 96.7% and 97.5% of transannular patching group and pulmonary valve sparing group respectively, were in each group who were in functional class III. There was no significant statistical difference that was noted in all the outcomes that were determined for both group. **Conclusion:** Both RV systolic and diastolic dysfunction are present in the early post operative period. Diastolic dysfunction was more common among patients who had transannular patching while systolic dysfunction was more common among patients who had pulmonary valve sparing. Pulmonary incompetence was more common among the transannular patching group. Most patients in both groups were in functional class II and had sub-optimal distance travelled in six minute walk test.

PHC.R.020.12

Predictive Value of 6-Minute Walk Distance on Major Adverse Cardiovascular Events 180 Days Post-discharge Among Acute Coronary Syndrome Patients

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Background: Philippine data on outcomes of acute coronary sydrome (ACS) patients post- "acute phase" is limited. This study attempted to determine significant association of distance walked by ACS patients in the 6-Minute Walk Test (6-MWT) and incidence of major adverse cardiovascular events (MACE) within 180 days (6 months) post-test. **Methods:** This is a prospective cohort study of ACS patients at the Philippine Heart Center (PHC) who underwent 6-MWT during discharge from May 2013 to October 2014 and were followed for 180 days for MACE (i.e. composite of non-fatal MI, stroke, and cardiovascular death) and secondary outcomes (i.e. composite of all-cause death, non-fatal MI, stroke and heart failure and each component outcome). Cut-off distance predictive of MACE was determined. **Results:** Hypertension (p=0.04), lower Troponin I (p=0.03), SBP (p=0.00) and HR (p=0.03) elevation post-6-MWT and elevated baseline oxygen/O_2) saturation (p=0.04) were baseline parameters significantly associated with MACE. A cut-off distance of 320 meters was predictive of MACE with 35.44% sensitivity and 35.26% specificity. The 6-Minute Walk Distance (6-MWD) was not associated with MACE but

significantly associated with secondary outcomes specifically all-cause death (p=0.001), cardiovascular death (p=0.008), heart failure (*p*=0.007) and its composite (p=0.001). **Conclusion:** 6-MWD was not associated with MACE but significantly associated with the composite outcome of all-cause death, non-fatal MI, stroke and heart failure primarily driven by all cause death at 30, 90, and 80 and heart failure at 90 and 180 days post discharge. The 320 m cut-off has low sensitivity and specificity hence, it could not be used solely in predicting MACE among ACS patients 6 months post discharge.

PHC.R.022.12

The Clinical and Procedural Outcome of Patients Undergoing Trans-radial Approach versus Trans-femoral Approach in Percutaneous Coronary Intervention

Philipp C. Ines, MD; Norberto O. Tuaño, MD; James Ho Khe Sui, MD

Background: Trans-Radial Approach (TRA) has been slowly and steadily growing worldwide although there are still different preferences in access site between angiographers, institutions and countries. One rate-limiting step in the technical aspect would be its learning curve. This study may contribute to the local initiative for the increased utilization of the TRA. **Objectives:** To compare the clinical and procedural outcome of patients undergoing TRA as compared with Trans-Femoral Approach (TFA) in percutaneous coronary intervention (PCI). **Methods:** Study population (n = 109) includes patients for PCI using TRA (n = 55) and TFA (n = 54) from the period of January 2013 to December 2014. The in-hospital all-cause mortality, myocardial in farction or cerebrovascular disease (Major Adverse Cardiac and Cerebrovascular Events - MACCE) among patients undergoing TRA was compared to TFA. The bleeding complications were obtained using a standardized bleeding criterion (the GUSTO Bleeding Classification - none, mild, moderate or severe/life-threatening). Univariate and multivariate logistic regression analysis (odds ratio with a 95% confidence interval) was used to determine the strength of association between the arterial access and the outcome. **Results:** There is a significant reduction the observed bleeding (hematoma) with the TRA during PCI as compared to TF A (OR = 2.66, p = 0.022). There was no statistically significant difference (p > 0.05) between MACCE, occurrence of arrhythmia, procedural time, fluoroscopy time and cross-over between access in this study. **Conclusion:** TRA offers a favorable advantage on outcomes by reducing the cost burden of bleeding and vascular complications in certain subsets as compared to the traditional TFA. The clinical and procedural outcome of TRA was comparable to TFA.

PHC.R.023.12

Comparison of the Prognostic Value of the Global Risk Score and the Clinical Syntax Score in Predicting Outcomes of Patients Undergoing Percutaneous Catheter Intervention at the Philippine Heart Center

Lucky R. Cuenza, MD; Marianne P. Collado, MD

Background: Risk stratification has become an important part in determining outcomes and prognosis of patients undergoing percutaneous catheter intervention. We sought to compare the Clinical Syntax Score and the Global Risk Score in predicting outcomes of patients undergoing PCI at the Philippine Heart Center. **Methods:** This was a prospective cohort study of patients undergoing PCI. Clinical and angiographic characteristics were noted. Patients were risk stratified using the Clinical Syntax Score (CCS) and the Global Risk, Score (GRS).The patients were followed-up at 1 month and 1 year for the occurrence of major adverse events. **Results:** Of the 92 subjects 10 patients died, 7 from cardio vascular causes. Both the GRS (OR= 7.5, p=0.00l) and the CSS (OR 63, p=0.00l) had good predictive value for the occurrence of MACEs. Independent predictors include age, history of previous ACS, chronic kidney disease, low ejection fraction, high Syntax score and procedural success. Receiver operator characteristic curves showed that the Global Risk Score had better discriminatory ability than the Clinical Syntax Score (0.89 vs 0.76, p=0.007) in the prediction of MACEs and overall mortality after 1 year (0.91 vs 0.74, p=0.005). **Conclusion:** Both the Global Risk Score and the Clinical Syntax score can be used to predict outcomes after PCI. The Global Risk Score appears to

have superior predictive and prognostic utility compared to the Clinical Syntax Score. Use of both scores are feasible and encouraged along with sound clinical judgment for optimum management and prognostication.

PHC.R.024.12

Adherence to Indexed EOA Calculation in Choosing Aortic Valve Size to Prevent Patient Prosthesis Mismatch in Patient Undergoing Aortic Valve Replacement

Janice Joan Santiago, MD; Edwin Tucay, MD

Background: Patient prosthesis mismatch (PPM) has been recognized as clinical problem post prosthetic valve replacement since the first publication by Rahimtoola in 1978 and the only parameter that has been validated to identify PPM is the indexed EOA. This study was done to determine if targeting a minimum indexed effective aortic orifice area preoperatively can prevent PPM. **Methods:** A total of 48 patients were recruited in this study during the period of July 1, 2013 to January 31, 2015. All patient underwent elective aortic valve replacement. The type and size of prosthetic valve used were surgeon's choice. They are classified as adherent to indexed EOA calculation if the valve used has a EOA is equal or more than the computed EOA (computed EOA= IEOA (0.86) x BSA), and not adherent if it is less than the computed EOA. All patient were evaluated for PPM 2-4 weeks post operatively by 2D echocardiography with doppler. PPM is diagnosed based on the algorithm on American Society of Echo-cardiography. **Results:** Patient's characteristics such as age, sex, BSA, etiology and aortic leasion, and type and size of prosthetic valve used were not significant in both groups thus unlikely to have effects on result. Out of 48 patients, 42 (87.5%) belongs to adherent group and 6 (12.5%) in non adherent group. Among tile subjects, four patient had patient prosthesis mismatch, with an incidence rate of 8.33% (95% CI: 2.32% - 19.98%). The proportion of subject in adherent group without PPM is 93.2% which is higher than that of subject without with PPM at 25%. This translates to odds ratio of 41 which means the odds of PPM is 41 times among non adherent group (p value= 0.008) **Conclusion:** There is correlation between PPM and the adherence to indexed EOA calculation in choosing aortic valve size in patient undergoing aortic valve replacement thus targeting a minimum indexed effective aortic orifice area preoperatively can prevent PPM.

PHC.R.025.12

Association of ST Segment Changes in Lead aVR with the Six-Minute Walk Test Derived Functional Capacity among Post-ST Elevation Myocardial Infarction Patients

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Background: Lead aVR is one of the leads in electrocardiogram that is frequently ignored. The value of ST changes in Lead aVR in relation to functional capacity is not yet known in Philippine Heart Center. This study aims to determine if there is an association between the ST changes (depression and elevation) in lead aVR with the functional capacity as assessed by six-minute walk test (6MWT). **Methods:** This is an analytical cross-sectional study with prospective mode of data collection. This involves all patients who had ST elevation myocardial infarction (STEMI) and managed medically at the Philippine Heart Center. Post STEMI patients during admission had ST changes determination from ECG on admission. A 6MWT was performed to determine the functional capacity prior to discharge. The results of the 6MWT are then associated with the ST changes in lead aVR. **Results:** A total of 49 patients were included in the study. The average age was 58±11.9. There were more males, comprising of 63% of the total population. The patients were then assigned into different groups based on the ST changes in lead aVR (ST elevation >0.5mV, ST depression> 0.1 mV and ST depression < 0.1 mv. There was no patient who had ST elevation < 0.05 mV. The 6MWD is lower in the other three groups as compared to the patient with isoelectric ST segment, however, the result was not statistically significant (p value of 0.261, 0.735, 0.341, respectively). **Conclusion:** This study showed that the ST changes in lead aVR (elevation or depression above and below the isoelectric point) are not significantly associated with the functional capacity as assessed by the 6MWT taken prior to discharge.

PHC.R.026.12

Clinical Predictors of In-hospital Survival Among Post-Cardiopulmonary Arrest Patients

Franz Albert Go, MD; Chito Permejo, MD

Background: Cardiopulmonary resuscitation (CPR) is an emergency procedure performed to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person in cardiac arrest. This entails performing comprehensive CPR followed by an aggressive post-resuscitation care. While aggressive post-resuscitation care is necessary, certain post-CPR predictors maybe investigated to predict and prognosticate mortality outcomes among these patients to avoid medical futility and inappropriate use of resources. This study aims to determine the prognostic value of post-CPR variables in predicting mortality among post-cardiopulmonary arrest patients in Philippine Heart Center (PHC). **Methods:** This research is a prospective cohort single center study of 236 post-CP arrest patients [all adults who had 1st time CP arrest and was successfully resuscitated through ACLS] in Philippine Heart Center from March 2013 to January 2015. Demographic data, post-CPR clinical variables (total epinephrine dose, pupillary light response, electrocardiographic rhythm, and systolic) and in-hospital outcomes were regularly obtained. **Results:** Higher doses epinephrine [OR = 1.107; p = 0.011], sinus bradycardia [OR= 4.456, p = 0.181] and atrial fibrillation rhythm [OR = 1.155, p = 0.666], sluggish [OR = 2.852, p = 0.010] to non-reactive pupillary response to light [OR = 10.409, p =0.000] were associated with in-hospital mortality Similarly, use of angiotensin receptor blockers [OR = 2.370, p = 0.037] and calcium channel blockers [OR = 2.128, p = 0.023] were also associated with in-hospital death. A higher systolic blood pressure [OR = 0.989, p = 0.030] was correlated with improved survival. **Conclusion:** This study revealed that higher doses epinephrine, sluggish to nonreactive pupillary response to light, and lower mean systolic BP were statistically prognostic for in-hospital death. Similarly patients who were maintained on angiotensin receptor blockers and calcium channel blockers were statistically associated with in hospital death.

PHC.R.027.12

Hyperuricemia and Its Prognostic Value in Patients with Rheumatic Heart Disease

Paolo P. Villanueva, MD; Ana Beatriz Medrano, MD

Background: Hyperuricemia has recently been linked to cardiovascular diseases such as coronary artery disease and heart failure as a marker of disease activity development of heart failure among patients with rheumatic heart disease (RHD). **Methods:** This is a prospective cohort study correlating the increase in uric acid levels with the development of heart failure symptoms in patients with RHD. Fifty-one subjects with RHD and with good functional capacity (New York Heart Association [NYHA] Class I) were included in the study. The subjects were then followed up for 1 year, in which 24 subjects fulfilled the Framingham criteria for heart failure, and 27 remained in NYHA Class 1. **Results:** Mean baseline uric acid levels were similar between the two groups (heart failure 390 ± 82 umol/L; no heart failure 388 ± 134 umol/L; p = 0.964). The mean baseline and end point serum uric acid levels in those without heart failure were not statistically significant (baseline 388 ± 134 umol/L vs. endpoint 391 ± 134 umol/L; p = 0.77). In those who developed heart failure, the mean endpoint serum uric acid levels became significantly higher from baseline (baseline 390 ± 82 umol/L vs. endpoint 437 ± 106 umol/L; p = 0.0007). There was a significantly greater increase in serum uric acid levels in patients who eventually developed heart failure symptoms. (heart failure: 47.1 ± 59.1 umol/L vs. no heart failure: 2.6 ± 46 umol/L; p = 0.004). An increase in serum uric acid level by 30 umol/L from baseline has a sensitivity of 70.83% and a specificity of 74.07% for predicting the occurrence of heart failure symptoms. **Conclusion:** Based on this study, increasing serum uric acid levels is associated with the development of heart failure symptoms in patients with RHD.

PHC.R.031.12

Predictors of Mortality in Patients Undergoing Arterial Switch Operation in the Philippine Heart Center

Gerrylouie R. Abadies, MD; Reynante Gamponia, MD; Merceditas Quinon, MD

Background: The arterial switch operation has been considered one of the more difficult operations of the heart. Aside from the technical aspects, preoperative preparations have been crucial in the postoperative outcomes of patients. Neonatal intervention has been the standard of care, however, older patients have been successfully operated so that factors need to be reevaluated. **Methods:** This is a retrospective study done in the Philippine Heart Center on arterial switch operations from January 2006 to December 2014. Medical records of 137 patients were reviewed. Emergency cases and those with prior surgeries were excluded from the study. Only the preoperative and intraoperative data were collected and analyzed in relation to mortality. **Results:** The in-hospital mortality rate is 35%; with the highest mortality rate at 82% in 2006 and lowest at 12% in 2008. Bypass time was shown to be significant risk factor for mortality (p-value=0.006; odds ratio =1.018) as well as the length of the patients (p-value=0.035; odd ratio=0.919). Other parameters such as age at the time of surgery (3 weeks vs older patients), sex, weight, body surface area, and presence of ventricular septal defect were not found to be significant. Intraoperative factors such as cross clamp time and cardiopulmonary bypass lowest temperature, the need for total circulatory arrest or low-flow cardiopulmonary bypass, associated aortic arch obstruction, and whether the patient had delayed sternal closure were also not significant. **Conclusion:** Arterial switch operation remains to be a high risk operation especially in the Philippine Heart Center. The high overall mortality is not only related to the complexity of the procedure but also to the preoperative variables of the patient and even a center specific limitation. In the absence of a practice guideline at present, the surgeon and the team taking care of the patient may have to decide among themselves, the operability of the patients.

PHC.R.032.12

Clinical Outcome and Health Related Quality of Life in 2-hour versus 6-hour Sandbag Placement Among Post-Coronary Angiogram Patients in Philippine Heart Center

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Background: The risk of access site complication is low but significant among patients who undergo coronary angiography. Complications include hematoma, bleeding, pseudoaneurysm, distal embolization, and arterial thrombosis. Patients are then restricted to bed rest for at least 6 hours to reduce such complications. Because of the lack of available literature locally to support this current practice, this study aims to evaluate the effect on vascular complication rates of putting a sandbag on the femoral access site for 2 hours compared with the standard 6-hour placement after cardiac invasive procedure, and to determine severity of back pain relate to bed rest duration after coronary angiography. **Methods:** This is a randomized controlled trial among 341 adult patients who underwent elective coronary angiography using femoral approach. The control group 6-hour sandbag placement while the experimental group who received 2-hour sandbag placement. **Results:** The results showed that the 2-hour and 6 hour sandbag application showed no significant difference (p=0.832) when it comes to bleeding post procedure. The 2-hour sandbag application further showed better tolerability among the study population as it resulted into less pain (p=<0.00l) and better general sense of wellbeing in terms of mobility (p=<0.001), self-care (p=0.001), usual activity (p=0.005), anxiety/depression (p=0.010). **Conclusion:** The 2-hour application proved to be equal to the 6-hour sand bag application in terms of bleeding rate post procedure. Furthermore, the study population in the 2-hour sandbag application benefited more from the shorter immobilization time as compared to the conventional immobilization period.

PHC.R.033.12

Clinical Predictors of Perioperative Morbidity and Mortality in Post Mitral Valve Repair Patients in Philippine Heart Center

Paul Christian D. Delos Reyes, MD; Chito Permejo, MD

Background: Mitral valve repair is an acceptable alternate and have shown to be superior to valve replacement in various mitral valve diseases. It offers a lower mortality rate and better postoperative outcomes. Freedom from lifetime anticoagulation makes this

modality an attractive alternate and has been the procedure of choice for patients with degenerative mitral valve disease. This study was done to determine predictors of morbidity and mortality in patients [or elective mitral valve repair with or without concomitant procedures. **Methods:** All patients more than 19 years old for elective mitral valve surgery either l one or with associated procedures were included in this study. Preoperative clinical data were taken as well as the results of echocardiography done at least 6 months prior to the procedure. Intraoperative and postoperative data were gathered and results correlated with outcomes. Follow-ups were done in 1 week and 1 month after surgery. **Results:** Fifty seven patients for elective mitral valve surgery eligible for inclusion were enrolled; 38 patients with concomitant surgery and 19 underwent lone mitral valve repair (with or without tricuspid valve repair). Lower hemoglobin values (OR:0.96,p value: 0.034) and higher Left Ventricular End Systolic Volume (LVESV) (OR: 1.02, p value: 0.034) and Mean Pulmonary Artery Pressure (MPAP) (LR: 1.06, p-value: 0.036) were seen in patients who had outcomes. The findings of posterior mitral valve disease (OR:0.18, p-value: 0.02) on 2D echo confers a protective factor for adverse event. Intraoperatively, significant correlation with outcomes were noted with increased duration of operation (OR: 1.46, p-value:).029), cardiopulmonary bypass (OR: 2.11, p value: 0.012) and aortic clamping time (OR:2.17. p-value:0.007). Operative findings of annular dilation (OR: 4.01, p-value: 0.0+4) is associated with outcomes while chordae (OR:0.20, p-value: 0.021) is protective. Mortality rate was noted to be at 3.5%. Events post surgery occurred in 79% with arrhythmia (59%) as the most common, followed by pulmonary/surgical site infection (33%) and acute renal failure (25%). **Conclusion:** Mitral valve repair either as a lone procedure or with concomitant cardiac surgery is a safe and well-tolerated procedure with low mortality rate with arrhythmia as the most common postoperative complication. A low preoperative hemoglobin levels correlated with adverse event as well as increase in the echocardiographic parameters such as: LVESV and MPAP. Longer duration of operation, cardiopulmonary bypass and aortic clamping time showed a significant correlation with outcome as well as the intraoperative finding of annular dilatation and the presence of posterior mitral valve disease and torn chordae were protective of the adverse outcome.

PHC.R.034.12

Clinical, Echocardiographic, and Hemodynamic Factors Affecting Success of Percutaneous Mitral Balloon Valvotomy

Debra P. Urbina, MD; Ramoncito Tria, MD

Background: Percutaneous mitral balloon valvuloplasty is the procedure of choice for selected patients with rheumatic mitral stenosis with favorable valve morphology based on echocardiographic grading system. These study was done to integrate clinical, echocardiographic and hemodynamic parameters as predictors of successful immediate outcome. **Methods:** A retrospective review of patient records was done. A total of 150 patient records were reviewed between January 2010 to January 2013. Baseline demographic, clinical, echocardiographic, and hemodynamic variables were evaluated in order to identify predictors of immediate outcome. A successful outcome (defined as MV area >l.5 cm^2 without a >2-grade increase in mitral regurgitation and without left-to-right shunt with a pulmonary-to-systemic floor ratio of <l.5:1) was achieved in 114 (76%) while 36 (24%) had unsuccessful outcome. **Results:** Of the 36 with unsuccessful outcome, 23 had >2 grade increase in mitral regurgitation, 13 had mitral valve area <1.5 cm^2 by planimetry. There were no reported immediate periprocedural mortality. PHC score (odds ratio, 0.163; p = <0.00l) and LA size (odds ratio, 0.55; p=0.034) and pre-PPV pulmonary artery pressure (odds ratio, 0.94; p=<0.00l) and pre-PMV mitral valve gradient (odds ratio, 0.95; p=0.050) were significant predictors of successful outcome. **Conclusion:** Percutaneous balloon mitral valvuloplasty has good immediate results. Echocardiographic scoring (PHC score), left atrium size and hemodynamic parameters (pulmonary artery pressure and mitral valve gradient) are predictive of outcome.

PHC.R.035.12

Association of Hyperuricemia with Carotid Intima Media Thickness (C-IMT) Among Hypertensive Patients with Normal Renal Function

Ma. Barbra A. Destajo,MD; Ana Beatriz Medrano, MD

Background: High levels of blood uric acid or hyperuricemia have been associated with cardiovascular diseases including hypertension, metabolic syndrome, and coronary artery disease in several epidemiologic studies. The purpose of this study is to determine the association of hyperuricemia with atherosclerotic burden as measured by carotid intima media thickness in hypertensive patients. **Methods:** A cross-sectional study done on hypertensive patients was conducted at the Philippine Heart Center from January 2013 to December 2014. Normouricemic and hyperuricemic subgroups were determined. C-IMT determination was done. The association of hyperuricemia with carotid intima media thickness was determined using an independent *T*-test and Chi square test. **Results:** A total of 40 hypertensive patients were included in the study (20 normouricemic and 20 hyperuricemic). Majority of the subjects were females (N=11 (55%) in the normouricemic group and N=12 (60%) in the hyperuricemic group). The mean age for the normouricemic group "as 44.45 ± 7.76 years and 50.15 ± 5.67 years for the hyperuricemic group. Hyperuricemic patients were noted to have higer levels of BMI, which was statistically significant (p-value 0.045). Hypertensive subjects with normal blood uric acid levels have similar C-IMT levels as compared to the hypertensive subjects with elevated blood uric acid levels. The results showed that the uric acid level is not significantly associated with C-IMT. **Conclusion:** There is no association between hyperuricemia and carotid intima media thickness in hypertensive patient. The level of uric acid in the blood may be considered a risk factor for cardiovascular disease as it is closely associated with hypertension, dyslipidemia, and metabolic syndrome which are already proven to increase ones risk for atherosclerotic cardiovascular disease.

PHC.R.036.12

Body Mass Index and Serum Albumin as Predictor of In-Hospital Morbidity and Mortality in Patients with Acyanotic Congenital Heart Disease Admitted for Surgical Correction

Kristine Eder Koa, MD; Efren Vicaldo, MD; Ramon Ribu, MD

Background: Nutritional assessment is an important part of pre-operative evaluation of patients undergoing surgery. Body mass index (BMI) and serum albumin are two parameters used to quantify nutritional status. With the increasing prevalence of malnutrition in the Philippines, a significant number of patients, including those with congenital heart disease (CHD), are expected to be affected. Knowledge is limited about the effect of BMI and serum albumin on the outcomes of patients with congenital heart disease (CHD) undergoing surgical correction. **Methods:** This is a prospective cohort study of adult patients with acyanotic heart disease admitted at Philippine Heart center from January 2013 to December 2014 for surgical correction. They were categorized into underweight (BMI ≤18.4 kg/m^2), normal (BMI 18.5- 24.9kg/m^2), and overweight (BMI 2:25 kg/m^2) Serum albumin were obtained and used to categorize patients as follows: abnormal <35 g /L .and normal 2: 35 g/L Statistical analysis was used to determine the association of body mass index and albumin with the in-hospital mortality and morbidity. **Results:** There were 91 patients eligible and recruited for the study. A total of 13 (14.3%) patients had in hospital morbidity: 5 out 26 (19%) were in the underweight group; 7 out of 51 (14%) in the normal BMI group; and 1 out of 14 (7%) in the overweight group. There was no statistically significant correlation between Body Mass Index and occurrence of postoperative complications (OR 1.50, p=0.531). Thirteen (13) out of 13 (100%) who had in-hospital morbidity had normal albumin levels. Statistical correlation between albumin and postoperative complications cannot be determined. The mean length of ICU and hospital stay is slightly longer in the underweight group as compared to that of the normal and over eight groups but is not statistically significant (p value=0.658, 0.489 respectively). The mean length of ICU and

hospital stay is slightly longer in the normal albumin group but is not statistically significant. (p=0.649, 0.556 respectively). **Conclusion:** In our study, body mass index and albumin levels were not associated with postoperative morbidity and mortality in patients with acyanotic congenital heart disease undergoing corrective surgery. However, the association of albumin with in hospital morbidity and mortality was inconclusive due to limited number of subjects in the low albumin group. Further studies with larger sample size is warranted to determine their exact relationship with postoperative outcomes.

PHC.R.037.12

Clinical Outcome and Cost Analysis of Surgical and Transcatheter Closure of Patient Ductus Arteriosus Among Pediatric Patients at Philippine Heart Center

Bernadette B. Valdez, MD; Marites R. Flores, MD; Teofilo Cantre, MD

Background: Closure of patent ductus arteriosus (PDA) has been traditionally done through surgery. In 1971, Porstmann performed the first catheter based closure of PDA and since then efforts to perfect a transcatheter approach to ductal closure have been extensive. PDA transcatheter device occlusion has been introduced in this institution and since then, there has been an increasing number of patients who undergo this procedure. Despite the statistics, controversy still exists concerning the cost, efficacy, and complication rates for those undergoing surgical closure as compared with transcatheter closure of a ductus arteriosus. **Objective:** To evaluate the clinical outcome and the cost of transcatheter device closure and surgical closure of PDA among pediatric patients in this institution. Specifically to determine the incidence of patients with PDA who underwent surgical and device closure from January 2010 to June 2012 and to determine the clinical effectiveness, morbidity, mortality and hospital expenses among these patients. **Methods:** This is a retrospective cohort study wherein records of children below 18 years old with PDA who underwent PDA closure, either through surgery or device closure from January 2010 to June 2012 in this institution were reviewed. **Results:** Of the 354 patients who underwent PDA closure, 60% underwent surgery and 40% underwent transcatheter closure. The mean age for the surgical group is 4.4 years and 6.5 years for the transcatheter group. The mean weight for the surgical group is 13.69 kg and 19.4 kg for the transcatheter group. There is female to male predominance with a ratio of 2.8:1 for both groups. The mean PDA size is 0.82 cm for the surgical group and 0.84 cm for the transcatheter group. Majority of both group had the conical type of PDA. Ninety percent for the surgical group and 95% for the device group had no complications. The most common complication in the surgical group is bleeding requiring blood transfusion (5.6%) but the more significant clinical morbidity is massive hemothorax requiring exploratory thoracotomy (0.94%). For the device group, the most common complication is likewise bleeding requiring blood transfusion (2.8%) but the more significant clinical morbidity is device embolization requiring surgical retrieval (1.42%). Under the surgical group, there were only 3 patients who were reported to have residual shunt. In the transcatheter group, only one patient was reported to have residual shunt which eventually closed 6 months after the procedure. None of the complications were statistically significant. Both group have 100% survival rate. The mean actual charges for the uncomplicated surgical group is ₱100,317.62 and is ₱139,738.12 for the transcatheter group. **Conclusion:** Transcatheter closure is as effective as surgery in closing patent ductus arteriosus with statistically insignificant rate of complications. The cost of transcatheter closure is 29% more expensive than surgical closure and this is due to the actual cost of devices available in the market.

PHC.R.004.13

Correlation of Pulmonary Artery Measurements in Chest Radiographs With the Severity of Chronic Obstructive Pulmonary Disease

Raniel Joseph F. Bautista, MD; Dehuel Cuyacot, MD; Sarah Victoria L. Zampaga, MD

Background: Chronic Obstructive Pulmonary Disease causes pathological changes found in the proximal airways, peripheral airways, lung parenchyma, and pulmonary vasculature. Our

study investigated on the association of structural changes using chest radiographic pulmonary artery indices and the severity of COPD. **Methods:** Patients with COPD were classified by GOLD staging. Pulmonary artery measurements/indices that include transhilar, RDPA and MPA diameters and hilarthoracic and MPA-Ao ratios, were taken by 2 radiologists. Interobserver variability was calculated using paired *T*-test. Correlation of the different pulmonary artery indices with the severity of COPD was made using Spearman's rank correlation coefficient. All statistical analyses were performed using STATA version 13, and P values < 0.05 was considered to indicate statistical significance. **Results:** A total of 108 patients with ages 60.23±13.50 were included in the study. Among the different parameters measured, hilar thoracic index, RDPA diameter, MPA diameter and MPA-Ao ratio showed significant, moderate positive correlations with severity of COPD (all had rho OAO-0.50, p <0.001). The transhilar diameter correlates weakly but significantly (rho 0.30,p 0.001). **Conclusion:** Our study showed that Hilar Thoracic Index, RDPA diameter, MPA diameter, and MPA-Ao ratio correlates fairly well with the severity of COPD. Hence, these parameters can be used as a supplementary or an alternative indicator of the severity of COPD. It is readily available information that can be determined immediately on the first chest x-ray of COPD patients. Thereby, allowing the clinicians to promptly predict the course of the disease and therapy.

PHC.R.005.13

Correlation of Radiologic Signs of Left Atrial Enlargement with Left Atrial Volume Index

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Background: Distance between left main bronchus to double density and widening of tracheal bifurcation angles on chest radiographs are signs of left atrial enlargement, however their relationship with left atrial volume index (LAVI) has not been widely established. This study aims (1) to determine the relationship between these signs and LAVI measured by 2D echocardiography, and (2) to compare the diagnostic values of these signs in predicting left atrial enlargement **Methods:** Total of 146 subjects who underwent echocardiography from November 2013 to January 2014 and had chest x-rays within 1 week were enrolled. Images were retrieved. LA volumes were remeasured. LA enlargement was defined as LAVI > 28 ml/m^2. Distance from double density and subcarinal angles were determined. Data were analyzed by statistical methods. **Results:** Pearson correlation shows the distance from double density having moderate correlation with LAVI (r=0.5445, p=0.0000), while subcarinal angle has weak correlation (r=0.3750, p=0.0000). Established distance from double density cut-off of 7 cm yielded specificity = 87.88 % and sensitivity = 63.51%. Established subcarinal angle cut-off of 100% yielded specificity = 100% and sensitivity = 4.21%. Area under the ROC curve shows positive correlation between LA enlargement signs and LAVI. **Conclusion:** When visualized in the chest radiograph, the distance from the double density to left main bronchus is the superior diagnostic tool in predicting LA enlargement. Very high specificity and very low sensitivity of subcarinal angle limit its utility as diagnostic tool for predicting LA enlargement.

PHC.R.007.13

The Association of Body Mass Index (BMI) to Asthma Control in Adults

Jasmine I. Tan-Pastor, MD; Aileen Guzman-Banzon, MD; Ma. Encarnita B. Limpin, MD

Background: Body mass index can influence the natural history of asthma control and might influence response to asthma. The aim of this study is to determine the relationship of BMI to asthma control. **Methods:** One hundred forty-three eligible subjects from Philippine Heart Center service and private clinics and wards were recruited. Body mass index was calculated based on their height and weight. Asthma control was determined based on the Asthma Control Test score. **Results:** Among patients with controlled asthma, 5 (6.94%) have normal BMI while 67 (93.06%) have more than normal BMI. The odds of controlled asthma is 3.29 times high among individuals with BMI more than normal as compared to those with normal BMI. **Conclusion:** There is a relationship between BMI and asthma control. And a higher

prevalence of controlled asthma in BMI more than normal is observed in our study.

PHC.R.008.13

Correlation of End-Tidal Carbon Dioxide by Capnography and Carbon Dioxide by Arterial Blood Gas Among Mechanically Ventilated Patients after Cardiothoracic Surgery at Philippine Heart Ceter

Keena P. Magallanes, MD; Dulce Requiron-Sy, MD; Maria Encarnita B. Limpin, MD

Background: Children are prone for pulmonary complications after cardiac surgery hence it is important to closely monitor those on mechanical ventilator. This study aims to determine correlation of end-tidal carbon dioxide by capnography and arterial carbon dioxide be arterial blood gas among mechanically ventilated patients after cardiac surgery. **Methods:** Prospective cross-sectional study of patients with acyanotic and cyanotic congenital heart disease who underwent cardiac surgery. Data collected included demographic details and simultaneous EtCO2 (microstream capnography) and arterial blood gas values. We determined the correlation coefficient and degree of bias with 95% confidence interval between EtCO2 and PaCO2. **Results:** There were 158 end-tidal arterial CO2 from 36 patients (18 with acyanotic and 18 with cyanotic congenital heart disease). The overall EtCO was significantly lower than the corresponding PaCO2 values. For the acyanotic heart disease, EtCO2 = 38 + 4.2 mmHg vs PaCO2 39.5 + 5.5 ($p < 0.001$) with mean difference 1.5 + 3.5 (95% C, I, 0.63 – 2.4). For the cyanotic heart disease, EtCO2 = 37.9 + 5.8 mmHg vs PacO2 39.2 + 6.2 ($p < 0.0001$) and in cyanotic heart disease has a correlation coefficient of 0.896 ($p < 0.001$). **Conclusion:** The study showed a good correlation of EtCO2 with PaCO2 in both acyanotic and cyanotic congenital heart disease after cardiac surgery.

PHC.R.009.13

Validation of Forced Expiratory Volume at 6 Seconds of Exhalation (FEV6) in the Detection of Small Airway Disease

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Background: Small airway disease continuous to be an important component of patients with chronic obstructive pulmonary disease (COPD). Spirometric measurements for assessing small airway pathology are simple to obtain, low-cost, readily available and show acceptable repeatability. We wanted to determine the accuracy of forced expiratory volume in six seconds of exhalation (FEV6) in detecting small airway disease using forced expiratory flow 25%-75% of FVC (FEF25%-75%) as a reference standard. **Methods:** This is a cross-sectional study done at Pulmonary Laboratory, Division of Pulmonary and Critical Care Medicine of the Philippine Heart Center. All adult patients who underwent spirometric studies from October 2013 to September 2014 were included. Baseline demographic data, smoking history and spirometric results were evaluated. The highest post-bronchodilator FEF 25-75% and FEV6 from test of acceptable quality were used for analysis. We used FEF 25% -75% as the reference standard for detecting small airway disease. Each subject was categorized as having "small airway disease" if the post bronchodilator value of FEF 25% -75% is <65% of the predicted as the lower limit of normality. The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of FEV6 in detecting small airway disease as defined by FEF 25-75% were calculated. **Results:** Of the 386 spirometric test analyzed, 245 were males and 141 were females. Sixty one percent of the subjects had smoking history and 33% had significant airflow obstruction. FEV6 has a 35.40% sensitivity and has 35.63% specificity in detecting small airway disease. With a positive and negative predictive values of 43.52% and 28.08% respectively. Subgroup analysis among subjects with airflow obstruction showed 62.20% diagnostic accuracy and 73.04% diagnostic accuracy among those with smoking history. **Conclusion:** Forced expiratory volume at 6 seconds (FEV6) has a limited value in detecting small airway disease among adult patients. However, its value can be represented by patients with significant airway obstruction and smoking history.

PHC.R.010.13

Effect of Thoracentesis in the Respiratory Mechanics and Gas Exchange Among Mechanically Ventilated Patients with Different Types of Pleural Effusion

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Background: Pleural effusion is one of the common pulmonary diseases which have diverse etiologies among mechanically ventilated patients. There are limited data in the literature to support its use in order to evaluate and compare the types of pleural effusion that could have greater effect to respiratory mechanics and gas exchange that would warrant an immediate decision to thoracentesis. The objective of this study is to determine the effect of thoracentesis in the respiratory mechanics and gas exchange among mechanically ventilated patients with different types of pleural effusion such as transudative, exudative, moderate and large pleural effusion admitted at Philippine Heart Center (PHC). **Methods:** A prospective, cross-sectional study conducted among admitted patients in PHC from September 1, 2013 to August 31, 2014, who received mechanical ventilation via a cuffed tracheal tube with transudative, exudative, moderate and large pleural effusion undergoing thoracentesis. Respiratory mechanics and oxygenation parameters were measured before and 30 minutes after thoracentesis. **Results:** A total of 46 patients were enrolled in the study with mean age of 70 years for which 70% were females and 30% were males. There were 32 transudative pleural effusion and 14 exudative effusion. Generally, there was no significant difference in the changes in mean respiratory mechanics and gas exchange after thoracentesis. There were changes after sub-analysis of each type and volume of effusion. There were improvements on the mean respiratory rate (p=0.003) and plateau pressure (p=0.033) among transudative. The static (p=0.110: and dynamic (p=0.362) lung compliances in transudative effusion also favored improvement but not significant. Both transudative and exudative effusion improved oxygenation. The improvement in respiratory mechanics and gas exchange such as the Pa02 and P (A-a) O2 gradient (p=0.009 and 0.019) after thoracentesis with large effusion is more evident than in moderate. **Conclusion:** An immediate thoracentesis could be beneficial among patients anticipated to have transudative pleural effusion with large volume as measured by ultrasonography.

PHC.R.011.13

Association of Nutritional Status Using Mini-Nutritional Assessment Short Form (MNA® -SF) with risk of Exacerbation Among Elderly COPD Patients

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Background: Malnutrition is a common extrapulmonary systemic effect of COPD. It has been shown that malnutrition is correlated with frequent hospital visits and an independent risk factor for mortality among COPD patients. This study aims to correlate COPD exacerbation with the nutritional status of the elderly patient aged ≥ 65 years old using the anthropometric measurements and MNA®-SF. **Methods:** A cross-sectional study involving 131 elderly COPD patients who were newly or already diagnosed with COPD confirmed by Pulmonary Function Testing (PFT) at Philippine Heart Center pulmonary laboratory were studied. Nutritional status using Mini Nutritional Assessment short form (MNA®-SF), Body Mass Index, and Anthropometric measurements (Mid Arm Circumference, Calf Circumference) were measured. The Global Initiative for Chronic Obstructive Lung Disease (GOLD) COPD Combine Assessment Tool was used to evaluate rate of exacerbation. Nutritional Status was correlated with the risk of exacerbation using the Pearson's product moment correlation, and was graphically presented using scatterplot. A *p*-value of < 0.050 was considered significant. **Results:** One hundred thirty one COPD patients participated in the study. Patients who were categorized as at risk of malnutrition and malnourished based on MNA®-SF have ≥ 1 episodes of exacerbation per year (r= 0.7041, p=0.000). BMI and MAC showed significantly negative correlation with risk of exacerbation (r= -0.3873, p=0.0 00; r = -0.2555, p=0.0039). **Conclusion:** There is a strong correlation between malnutrition and risk of COPD

exacerbation using the MNA®-SF as a nutritional assessment tool.

PHC.R.012.13

Validation of the HEART Score System in Emergency Department Patients with Chest Pain and Possible Acute Coronary Syndrome

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Background: Chest pain is one of the most common complaints of patients seeking consult in the emergency room (ER). The HEART score is a novel scoring system that utilizes the history, ECG, age of the patient, risk factors and troponin levels that may aid clinicians in the stratification of patients with chest pain in the ER. This study aims to determine the validity of the HEART score in predicting outcome in patients with chest pain seen in our emergency room. **Methods:** Patients who presented with chest pain in the emergency department of the Philippine Heart Center were included in the study and their HEART scores were determined prospectively. Patients were followed up for 30 days and the occurrence of acute myocardial infarction, revascularization and/or death were noted. The sensitivity, specificity, positive and negative predictive values were then calculated in each HEART score. **Results:** A total of 328 patients were included. One hundred seventy-six patients or 53.7% reached at least one endpoint. HEART scores of 0 to 3 yielded excellent sensitivity and negative predictive values. A score of 7 and above on the other hand showed high specificity and positive predictive values. The measured C-statistic for the HEART score was 0.951. **Conclusion:** The HEART score is an easy, reliable and convenient scoring system for stratifying patients with chest pain in the emergency room. It can be applied in our local setting and it has an excellent ability to predict the occurrence of adverse cardiac events.

PHC.R.014.13

Association of Patient Factor with Vascular Complication Among Adult Patients Who Underwent Intra-Aortic Balloon Pump Insertion

Jeremiah Butch T. Gemarino, MD; Ma. Consolacion Dolor-Torres, MD

Background: The use of Intra-Aortic balloon pump (IABP) has saved the lives of so many critically-ill cardiac patients. However, despite its benefits, complications arise from IABP implantation including vascular problems like dissection, perforation, ischemic extremity, thrombocytopenia, and even death. Despite its long history of clinical use, no thorough review of clinical outcomes associated with its use has been published. This study aims to determine the factors associated with the vascular complications in patients with IABP. **Methods:** This is a retrospective cohort done among adult patients who underwent IABP insertion at Philippine Heart Center from January 2008 to December 2013. Sample size was computed and samples were randomly selected from a list of patients who underwent IABP insertion during the specified period. Chart review was done and variables were recorded in a constructed data gathering tool. The following variables were noted in this study: age, sex, BMI, duration, indications, and timing of IABP, procedure/s associated with the insertion, presence of co-morbidities, and presence of vascular complications. **Results:** There were 132 eligible patients that were enrolled in this study. The mean age of the sample population is 62 ± 9.51 years. There were 93 males (70.45%) and 39 females (29.55%) in the study. Among the recruited subjects, 92 patients developed vascular complications (69.70%) while 40 patients (30.30%) were spared. The mean age of those who developed vascular complications was 62 ± 8.88 years while those who did not develop vascular complications was 60 ± 10.89 years. The average number of days on IABP in patients with vascular complications was 3.94 ± 3.12 days with 1.39 times more likely to develop vascular complica-tions and was statistically significant with a p-value of 0.007.For those patients whose IABP was inserted during coronary angiography and/or percutaneous coronary intervention (PCI), they were 2.5 times more likely to develop vascular complications and was clinically significant with a p-value of 0.024. Patients who are diabetics on insulin, with MI, valvular heart disease, stroke, smoker, pulmonary disease, critical CAD, refractory chest pain, and increased left ventricular end diastolic pressure (LVEDP) are at increased likelihood to develop vascular complications but

p-values did not reach statistical significance. **Conclusion:** A mean IABP duration of 4 days and coronary angiography and/or PCI are significantly associated with vascular complications among patients who underwent IABP insertion.

PHC.R.015.13

Utility of Cardiac Apex Indices on Chest Radiograph in Determining Ventricular Enlargement Among Pediatric Patients

Sarah Jane Villanueva-Mejia, MD; Marvin T. Tamaña, MD

Background: Specific chamber enlargement is an integral part in the evaluation of cardiac diseases. The emergence of CT scan and MRI have greatly improved the determination of specific chamber enlargement. However, affordability and easy accessibility of the chest radiograph makes it an integral part in the initial evaluation of cardiac pathology. In the pediatric group, there is paucity of objective methods in the evaluation of specific chamber size. The objective of this study is to determine the applicability of measuring cardiac apex displacement on chest radiographs in identifying specific ventricular chamber enlargement among pediatric patients for 2D echocardiography at the Philippine Heart Center Cardiographics Division. **Methods:** This prospective cross-sectional study included chest radiographs of 372 patients ages 0 to 6 and 7-18 years who had 2D echocardiography done on the same day to a week at the Philippine Heart Center Cardiographics Division from January - August 2012. Cardiac apex measurements namely cardiac apex to carinal vertex distance (AV), cardiac apex to diaphragm distance (AD) and cardiac apex to diaphragm/carinal vertex to diaphragm ratio (ADND) were determined and the results compared with echocardiographic findings. **Results:** The cardiac indices used show high sensitivity but low specificity in determining right ventricular enlargement in the age groups studied. AV distance and AD distance are the best indices to use in determining RV enlargement in the 0-6 and 7-18 age groups, respectively. On the other hand, using the ROC curve, AV distance is the only parameter that may be useful in the detection of left ventricular prominence. Optimal cut-off points were determined for each cardiac apex indices. **Conclusions:** Radiographic measurement of cardiac apex displacement may be useful screening tools in the assessment of specific ventricular enlargement in pediatric patients where other imaging modalities like echocardiogram and MRI are not readily available. All indices show high sensitivity but low specificity in determining right ventricular enlargement. However, AV distance yields the greatest specificity and sensitivity in detecting both RV and LV enlargement in younger patients, age 0-6 years. AD distance, on the other hand, yields the highest specificity and sensitivity in determining RV prominence in the 7-18 years age group. Cardiac apex-carinal vertex distance may be used in detecting left ventricular prominence in the 7-18 age group but with lower sensitivity and specificity.

PHC.R.018.13

Comparison of ECG Parameters (Fragmented QRS, Left Atrial Enlargement and Right Bundle Branch Block) in Predicting the Severity of Rheumatic Mitral Stenosis

Christian Allan T. Comandante, MD; Richard Torres, MD

Background: Rheumatic heart disease is an ongoing problem in our country. The prevalence of RHD is estimated to be between 0.8 to 1.2 per 1,000 school children. RHD usually involves the mitral valve and, left untreated, it most commonly presents as severe mitral stenosis. Echocardiography is the primary diagnostic tool for diagnosing and determining the severity of rheumatic mitral stenosis. Unfortunately, many patients cannot afford to undergo echocardiography to monitor disease progression. And so, reliable and affordable markers of severe mitral stenosis would be highly beneficial. Recently, there have been reports that show correlation between ECG findings and severity of mitral stenosis. It is the aim of this study to determine the association between these ECG findings and the presence of severe mitral stenosis. **Methods:** We evaluated the value of four ECG parameters (fQRS, RBBB, LAE and QT dispersion) in predicting the presence of severe mitral stenosis. We analysed 112 patients

diagnosed with mitral stenosis and inspected their ECG for the presence of these four ECG signs. Patients were categorized into mild, moderate and severe MS based on mitral valve area and mean valve gradient. Severity of MS was obtained by echocardiography. fQRS, RBBB and LAE were defined by ECG parameters. QT dispersion was measured manually. **Results:** fQRS, RBBB, LAE and wide QT dispersion were more frequently seen in patients with severe MS (p = 0.016. 0.016, 0.001 and 0.22 respectively). Among the ECG parameters, the presence of LAE (p= 0.001) had the strongest association with severe MS followed by fQRS (p = 0.016) and RBBB (p = 0.016). There was a trend towards increasing QT dispersion with severe MS, however the association was not statistically significant (p = 0.22). **Conclusion:** The presence of LAE, fQRS and RBBB are reliable indicators of severe MS.

PHC.R.019.13

The Effect of the Philippine Heart Center (PHC) Heart Failure (HF) Clinic Program on the Incidence of Mortality and Hospital Re-admission

Ada Cherryl L. Jayme, MD; Liberty O. Yaneza, MD

Background: The Philippine Heart Center (PHC), in an effort to reduce mortality and re-hospitalization rates and improve quality of life of patients with heart failure, established the PHC Heart Failure (HF) Clinic Program. The aim of this paper is to prospectively evaluate the effectiveness of the Philippine Heart Center Heart Failure Clinic Program in reducing mortality and re-hospitalization 12 months after discharge. **Methods:** This was a prospective cohort study. Subjects were divided into two groups: those who were enrolled with the HF Clinic Program and those who received conventional follow-up. Data on the number of read missions, hospital days and time to readmission were prospectively collected from the medical charts. Data were collected at baseline, after 3 and 12 months. **Results:** There were 150 patients included in the study, 64 of whom were enrolled in the heart failure clinic while 86 patients received conventional care. There was a higher mortality in the non-heart failure clinic group compared to those who were enrolled in the program. More patients in the non-HF clinic group were re-admitted within 3 and 12 months after inclusion compared to those who were enrolled in the program. Likewise, patients in the non-HF clinic group stayed longer in the hospital compared to those who were enrolled in the program. **Conclusions:** The Philippine Heart Center Heart (PHC) Heart Failure (HF) Clinic is effective in reducing mortality and re-hospitalization 3 and 12 after inclusion.

PHC.R.021.13

Diastolic Dysfunction as Predictor for Post-Operative Atrial Fibrillation (POAF) In Coronary Artery Bypass Graft (CABG) Patients

James C. Catoto, MD; Maria Christine Mendoza-Reyes, MD

Background: Post-operative atrial fibrillation (POAF) is a major cause of morbidity and mortality. It is associated with increased risk of stroke and death and constitutes asubstantial use of healthcare resources, including increased duration of hospitalization and hospital costs. No local studies so far investigating the relationship of left ventricular (LV) diastolic dysfunction and the incidence of post-operative atrial fibrillation in patients undergoing elective CABG surgery. The objective of this study was to investigate whether LV diastolic dysfunction was an important pathophysiological mechanism and predictor for the initiation of new-onset post-operative atrial fibrillation (POAF). **Methods and Results:** This is a prospective cohort study involving patients undergoing elective CABG at the Philippine Heart Center from March 2014 to March 2015. Results showed that male sex (p=0.019) and hypertension (p=0.036) were significantly correlated with diastolic dysfunction. Echocardiographic findings that are correlated with diastolic dysfunction were LVEF (p=0.01), LVEDD (p=0.001), LA size (p=<0.001) and LAVl (p=0.0 0l). We found out that there was high statistical correlation between the severity of diastolic dysfunction and the development of PAOF in patients undergoing elective CABG (p=<0.00l), with odds ratio of 4.97 (95% Cl: 2.02-11.91, p=<0.00l). **Conclusion:** These results suggest that, LV diastolic dysfunction is a powerful and independent predictor for the

initiation and progression of POAF. Its evaluation may be useful in risk stratification and in the initiation of pre-operative treatment for POAF in patients undergoing elective cardiac surgery.

PHC.R.022.13

Comparison of Outcomes of Coronary Artery Bypass Graft Surgery and Percutaneous Coronary Intervention in Patients with Chronic Kidney Disease

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Background: Chronic Kidney Disease (CKD) is a risk factor for Coronary Artery Disease (CAD). No randomized trial conducted yet to determine what revascularization procedure is superior among CKD patients diagnosed with CAD. This study evaluated clinical outcomes after percutaneous coronary intervention (PCI) versus coronary artery bypass graft (CABG) in patients with CKD. **Methods:** Patients with CKD Stage 3 to 5 who underwent PCI and CABG for coronary artery disease in Philippine Heart Center from 2010 to 2013 were identified. Patients with cardiogenic shock, acute ST elevation myocardial infarction, left main coronary artery involvement, previous PCI or CABG, concomitant valvular or congenital problem were excluded from the study. Outcomes were assessed up to an average of 3.5 years after revascularization. The primary outcome was mortality. Secondary outcomes were myocardial infarction (MI) and repeat revascularization. **Results:** Among CKD patients who underwent CABG, there was an 8.77% mortality rate or 5 out of 57 patients died compared to 7.59% mortality rate (6 out of 79 patients) in the PCI group (p value 0.804). For the secondary outcomes, repeat revascularization was noted in 6.33% (5 out of 79 patients) in the PCI group vs 3.51% (2 out of 57 patients) in the CABG group p value 0.469); myocardial infarction occurred in 5.06% (4 out of 79 patients) in the PCI group vs 3.51% (2 out of 57 patients) in the CABG group (p value 0.665). **Conclusion:** There was no significant difference in the choice of revascularization procedure for patients with CKD in terms of mortality, repeat revascularization, and myocardial infarction. But there is a trend observed regarding decrease incidence of repeat revascularization and myocardial infarction in the post CABG group.

PHC.R.023.13

Comparison of Kidney Functions in Patients with Chronic Kidney Disease Stage III-V and Coronary Artery Disease after Percutaneous versus Surgical Revascularization

Aleano L. Dayag, MD; Chito Permejo, MD; Agnes Mejia, MD

Background: The risk factors present in patients with coronary artery disease (CAD) are also present in patients with chronic kidney disease (CKD). Patients who will undergo myocardial revascularization with the use of coronary artery bypass surgery (CABG) and percutaneous coronary intervention (PCI) have the risk of further deterioration of their kidney function. **Methods:** The study was a retrospective cohort. The charts of 259 patients (122 in the CABG group and 137 in the PCI group) were reviewed. The patients who were included are those who are diagnosed with CAD and pre-existing CKD. The baseline variables that were determined prior to each procedure were creatinine, creatinine clearance, age, weight, blood pressure, heart rate, left ventricular end diastolic diameter, presence of hypertension, diabetes mellitus, smoking and history of myocardial infarction. The post-operative variables that were determined were serum creatinine, creatinine clearance, magnitude of increase of creatinine and decrease of creatinine clearance, occurrence of fluid overload, oliguria, anuria and need for post-operative dialysis. Other variables that were determined were serum potassium, sodium and ionized calcium. **Results:** There is no significant difference in terms of age, weight, baseline serum creatinine level, glomerular filtration rate (GFR), blood pressure and ejection fraction. There is a significantly more number of males in the CABG group and there are more diabetic patients in the PCI group. There is higher incidence of acute kidney injury among the patients who underwent CABG compared to PCI (64.75% vs. 34.31 %; $p<0.001$). The incidence of oliguria in the CABG group is higher compared to the PCI group (43.44% vs. 29.93%; $p=0.028$). The 24 hours and 48 hour post-operative serum creatinine level as well as

glomerular filtration rates were similar in both groups. The rate of need for hemodialysis after the procedure were similar for each group as well as the in hospital mortality rate. **Conclusion:** There is significantly higher incidence of AKI in patients with CKD after undergoing CABG compared to PCI. This is reflected by the significantly higher incidence of oliguria among patients who underwent CABG.

PHC.R.024.13

Factors Associated with Embolism in Patients with Atrial Myxoma: a Case Control Study

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Background: The treatment of cardiac myxoma is prompt surgical resection of the tumor and this aggressive approach is due to the constant threat of embolization from fragmentation or complete tumor detachment. There have been no studies appropriately designed and powered to develop a risk prediction model of tumor characteristics, as well as clinical factors, that may predispose to embolization. **Methods:** We retrospectively examined the demographics, diagnostic and tumor variables of patients with atrial myxoma admitted at the Philippine Heart Center from 2005 to 2014. Cases included those with embolic phenomenon documented by any imaging/ ancillary study. Those without embolic event were defined as controls. Initial analysis used descriptive statistics and univariate analyses to compare epidemiological, diagnostic and tumor variables between the case and control groups. Subsequently, candidate risk factors were entered into a logistic regression model to find out significant factors between the two groups. Statistical significance was considered at $p < 0.05$. **Results:** A total of 112 patients were identified during the 10year study period. Approximately 20.5% percent of these patients (n=23) were under the case group and 79.5% (n=89) were under the control group. The mean age is 52.4 years with predominance of females (67.9%). Majority presented with a functional capacity of class I (52.7%). Only 14.6% of the total population had atrial fibrillation. Masses were mostly located in the left atrium (88.2%) and, upon operation, most were attached to the interatrial septum without a stalk (49.6%). Among the comorbidities present, hypertension was significantly greater in those with embolic events compared to those without embolization (52.2% versus 20.2%, p=0.003). Those who had decreased sensorium during hospitalization was noted to be significant in the cases compared to the controls (39.1% versus 7.7%, p=0.001). However, significantly greater patients with pre-operative anticoagulation were noted in the case group compared to the control group (13% versus 1.1%, p=0.001), although only a minority of the total population had anticoagulation pre-operatively (3.6%). Among the laboratory tests, creatinine level was higher in those with embolic events but was found to be non-significant compared to those without embolic events (0.14 ± 0.19 versus 0.09 ± 0.05, p=0.143). Multivariate analysis revealed that patients with hypertension have greater risk of tumor embolization (p=0.001), as well as those who presented with decreased sensorium (p=0.000). Pre-operative anticoagulation conferred greater risk for embolization (p=0.012). On the contrary, atrial fibrillation did not confer a higher risk for embolic events compared to patients who are in sinus rhythm (OR=0.47, p=0.044). **Conclusion:** Patients with atrial myxoma who had embolic events were mostly hypertensive. Those who had decreased sensorium during admission were likely to have embolic phenomenon. Atrial fibrillation, compared to sinus rhythm, did not confer a higher risk for embolization. Surprisingly, pre-operative anticoagulation was noted to be higher in those with embolic events. This may be due to inadequate target levels of anticoagulation. Identifying possible factors like these, contributing to embolization in patients with atrial myxomas could help in the management and probably in prevention of mortality and morbidity from atrial myxomas.

PHC.R.025.13

Sagittal Abdominal Diameter (SAD) as Predictor of Coronary Artery Disease Among Filipino Adults

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Background: Anthropometric indices as a measure of abdominal obesity have been

associated with cardiovascular disease. Sagittal Abdominal Diameter (SAD) showed the strongest correlation with the cardio metabolic risk score compared with all other anthropometric measures. It may be a better predictor of CAD, because it has a strong correlate of visceral fat. Indirect anthropometric estimates of abdominal adiposity like SAD, if proven to be correlated with coronary artery disease, will be useful for clinical practice and epidemiologic surveys because they are simple, non-invasive and cost effective for screening CAD. Thus this study aims to determine the correlation of SAD and other Anthropometric Indices of Abdominal Visceral Obesity with presence of significant CAD. **Methods:** This is a cross-sectional study done at Philippine Heart Center from January 1, 2014 to March 15, 2015. Sagittal Abdominal Diameter and other Anthropometric Indices of Abdominal Visceral Obesity were measured and correlated with presence of Coronary Artery Disease using Multiple Logistic Regression Analysis. Analysis involving the ROC curve was used to determine and compare the area under the curve (AUC) of different anthropometric indices and to determine the cut-off value for sagittal abdominal diameter (SAD). **Results:** Among the Anthropometric Indices of Abdominal Visceral Obesity, the waist circumference (OR= 2.78; p-value 0.087) and waist hip ratio (OR= 1.33; p-value 0.026) is more associated although not statistically significant with presence of coronary artery disease. SAD (OR= 0.898; p-value 0.682) and BMI (OR= 0835; p-value 0.521) were not predictive of CAD. The computed cut off value of SAD was 16cm with a sensitivity of 44% and specificity of 61%. **Conclusion:** Among the Anthropometric Indices of Abdominal Visceral Obesity, the Waist Hip Ratio is more associated with presence of coronary artery disease compared to SAD.

PHC.R.027.13

Effect of Exercise Training on Echocardiographic Parameters of Heart Failure Patients with Low Ejection Fraction

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Background: Diastolic dysfunction (DD) is highly prevalent among patients with heart failure with reduced ejection fraction (HFREF) affecting up to 78% of all patients with reduced LV ejection fraction. In the clinical context of HFREF, diastolic dysfunction has been identified as an important predictor of increased mortality and reduced exercise capacity: a number of studies have documented the prognostic relevance of doppler-derived diastolic parameters (E-wave velocity, E/A ratio) in HFREF patients. The aim of this study is to examine the effect of 2-months exercise training on echocardiographic parameters with more emphasis on the diastolic function of heart failure patients with low ejection. **Methods:** Based on the inclusion and exclusion criteria, heart failure patients with ejection fraction of less than 40% were enrolled into the 2-month exercise training program which comprised of 16 sessions (2x per week). Baseline (before exercise training) and repeat (after exercise training) echocardiographic studies were performed for each subject. Left ventricular volume and ejection fraction (LVEF) were calculated in the apical four-chamber view using the Simpson method. The following flow-derived parameters of diastolic LV function were measured in all patients: mitral E/A ratio, mitral E-wave deceleration time (DT) and isovolumic relaxation time (IVRT). Tissue-Doppler imaging was performed to obtain septal and lateral diastolic myocardial annular tissue velocities (E′, A′). The severity of DD was classified according to the current recommendations. **Results:** A total of 20 patients were enrolled in the study from August 2014 to September 2015. Seventeen out of the 20 subjects have completed the 2-month exercise training without adverse events reported. Eight weeks of exercise training did not significantly affect the LVEF of the subjects but did show trend towards an increase in LV ejection fraction (LVEF: from 30.94 $\pm$ 5.83 to 36.82 $\pm$ 9.97; p value= 0.062). The left atrial size did not show significant difference post-exercise (LA size: from 4.45 $\pm$.67 cm to 4.2 9 $\pm$ .71 cm; p-value= 0.101). As assessed by tissue doppler, the training likewise did not significantly affect diastolic LV function (from 1.73 $\pm$ .88 to 1.33 $\pm$ .72; p-value = 0.164). **Conclusion:** An 8-week exercise training did not show significant improvement in systolic and diastolic function of 17 patients with HFREF who were enrolled in this study. But there was a

trend towards an increase in LV ejection fraction post-exercise. The positive effects of training were seen only as improvement in the functional capacity of the patients.

PHC.R.031.13

Outcome of Autologous Blood Tranfusion (Cell Saver) vs Traditional Blood Transfusion in Coronary Artery Bypass Patients

Stewart S. Santos, MD; Jay Junio, MD; Christopher C. Cheng, MD

Background: Coronary artery bypass graft (CABG) is widely performed procedure and majority are performed with cardiopulmonary by pass (CPB) that requires the need of multiple blood products. The use of numerous blood products has been associated with increased coagulation abnormalities, marked inflammatory response and associated with increased peri-operative and long-term mortality. The aim of this study as to investigate the potential additive effects of autologous cell saver blood transfusion and CPB on blood conservation, homologous blood transfusion requirements and clotting parameters in all patients undergoing CABG. **Methods:** This is a cohort study of adult patients who underwent elective CABG procedure in the Philippine Heart Center from 2011 up to 2015. Excluded from the study were patients who underwent emergency procedure, with other cardiac procedure other than CABG, and patients with hemoglobin less than l0 mg/dl. All data were gathered from the chart 1 review of the patients. They were divided into two groups, Group 1 were patients who underwent CABG with the use of cell saver and the other group were those who underwent CABG without the use of cell saver. Demographic data which include age, sex, co-morbidities, level of hgb, intraoperative and post-operative blood product used were analyzed **Results:** Total of 138 adult patients, 55 patients in the cell saver Group (I-4-3, F=12) and 83 patients in the non-cellsaver group (M=56, F=27). Comparison of baseline characteristics shows that there is no significant difference between the two groups in terms of age, sex, hypertension, DM, smoking, COPD, anemia, prolong bleeding parameters and uptake of ASA and clopidogrel. While in the comparison of the blood products used intra-operatively showed higher number of bags used in the non-cell saver group compared to the cell saver group (PRBC mean 1.7 SD 1.1 SD Plt mean 2.3 SD 1.03 and FFP mean of 3.2 SD 2.1). While lesseramount of blood products were used post operatively (PRBC mean 0.32 SD 0.57/ Plt mean 0.27 SD .955 and FFP mean 0.14 SD 0.65). **Conclusion:** The use of autologous blood transfusion or cell saver has an effect in reducing the post-operative blood transfusion and might lessen the tremendous effects of multiple blood transfusion. The author recommends the use of cell saver in patients with high risk of bleeding who will undergo any major surgeries, and also to have a study in terms of cost-effectiveness of cell saver compared to multiple blood transfusion.

PHC.R.037.13

Correlation of the Mixed Venous Oxygen Saturation (SvO_2) to the Hemoglobin-Based Transfusion Trigger in Post-CABG Patients

Catherine Y. Gonzales-Duazo, MD; Florian R. Nuevo, MD

Background: The rationale of RBC transfusion is to improve oxygen transport and ultimately tissue oxygenation.1 STS/SCA Clinical Practice Guidelines suggests the transfusion of red cells in most postoperative cardiac patients with hemoglobin level of 7 g/dL or less. Mixed venous oxygen saturation reflects the balance between the oxygen delivery and demand. This study determined the correlation of the mixed venous oxygen and current practice of blood transfusion in terms of the physiologic and clinical outcomes of post-CABG patients. **Methods:** One hundred eight patients undergoing CABG were enrolled. Participants were assigned into four groups according to their baseline SvO_2 and with the compliance to the recommendation on blood transfusion. The patients were grouped accordingly as follows: Group 1- Compliant- (Hgb>a7g/dl - no blood transfusion) $\pm SvO_2 \geq 65\%$, Group 2- Compliant (Hgb >7g/dl- No blood transfusion) $\pm SvO_2 < 65\%$,Group 3- non-compliant (Hgb >7g/dl- with blood transfusion) $\pm SvO_2 \geq 65\%$, Group 4- non-compliant (Hgb >7g/dl-with blood transfusion) $\pm SvO_2 < 65\%$. changes on the physiologic parameters and the clinical outcomes were observed during the first hour on admission and on the twelfth at SICU.

Results: Only patients with hemoglobin of >7g/dl were included in the study. Thirty-two of the 108 patients were given transfusion despite the lack of indication as per hemoglobin trigger. The study shows that there are no statistically significant differences with the outcomes of the patients after 12 hours at SICU among the four groups. Even with the SvO_2 of <65% or >65%, giving of blood did not significantly changed the physiologic parameters and the clinical outcome of the patients. **Conclusion:** Among the patients with hemoglobin value of >7g/dl, the physical and clinical outcome did not differ. SvO_2 may be a useful tool in conjuncture with hemoglobin level that would aid in the decision making to transfuse blood among patients with hemoglobin level of >7g/dl, wherein there is still no clear cut indication for the transfusion of blood among these group of patients.

PHC.R.038.13

A Cross-Sectional Study on the Venous-Arterial PCO_2 Gap as a Surrogate Parameter to Assess the Adequacy of Tissue Perfusion During the Immediate Post-Operative Period in the CABG Patients

Darwin James G. Alvarez, MD; Florian R. Nuevo, MD

Background: Inadequacy of tissue perfusion measured by blood lactate after cardiac surgery leads to increased morbidity and high mortality. Poor tissue perfusion also causes venous hypercarbia or an increased Pv-aCO_2 difference. This study investigates Pv-aCO2 difference as a surrogate parameter in assessing the adequacy of tissue perfusion. Methods: In a cross sectional study from October 2015 to May 2015 at the Philippine Heart Center 150 consecutive adult patients who underwent elective or emergency coronary artery bypass grafting under cardiopulmonary bypass surgery were enrolled. The Pv-aCO_2 difference (mmHg) and blood lactate (mmol/L) levels were measured within the first hour of admission to the SICU. The Pearson product moment correlation and scatter plot graph were used to determine the correlation between Pv-aCO_2 and lactate. The accuracy of different values for the Pv-aCO_2 gap against a blood ltate cut-off value of 2mmol/L was computed. **Results:** The mean Pv-aCO_2 was 7.66 difference ± 4.48 mmHg and the mean blood lactate was 4.12 ± 2.35 mmol/L. A mild correlation (r=0.34, p= <0.0001) between Pv-$aC0_2$ difference and blood lactate levels was observed. The diagnotic accuracy of the Pv-aCO_2 difference of 6mmHg had a sensitivity of 62.39 and a specificity of 66.67 with a positive predictive value of 86.9 and a negative predictive value of 33.33. **Conclusion:** The Pv-aCO_2 difference taken after cardiac surgery is a weak surrogate parameter in assessing the adequacy of tissue perfusion.

PHC.R.040.13

Association of Total Eosinophilic Count with the Development of Congestive Heart Failure with Acute Myocardial Infarction

Ivie Joyce U. Kong, MD; Frederick S. Gabriel

Background: It has been seen that atherogenesis represents an inflammatory process in the addition to infiltration of lipids. There have been studies that showed that increased eosinophilic count is related to adverse cardiac events such as post infarction congestive heart failure. **Objective:** To determine the asssociation of total eosinophilic count with the development of congestive heart failure in patients with acute myodial infarction. **Methods:** This is a prospective cohort study conducted at Philippine Heart Center. Patients included in this study were those admitted for acute myocardial infarction with no signs of heart failure. Outcome measures include the development of congestive heart failure as described by clinical signs and symptoms within four days of admission. **Results:** A total of 139 patient who fulfilled the WHO criteria for acute myocardial infarction were included in this study. In forty three (30%) patients, congestive heart failure developed within the four days of admission. The total eosinophiic count was found not to be significant predictor in developing subsequent congestive heart failure. **Conclusion:** Study showed no statistically significant association between total eosinophilic count in patients admitted for acute myocardial infarction and the development of congestive heart failure in the first four days of admission. However, our study showed age and diabetes mellitus can predict the risk for developing heart failure in post myocardial infarction patients.

PHC.R.004.14

Triple Valve Surgery: Preoperative Factors that Affect the Inhospital Mortality Rate for Triple Valve Surgery

Gerrylouie R. Abadies, MD; Samuel Andin, MD

Background: Triple valve surgery has been considered a complex surgery as they are done usually in rheumatic heart diseases, at least in our setting and literature have shown a relatively high mortality rate. We will attempt here to examine the preoperative factors that may be associated with mortality. **Methods:** This is a retrospective study done in the Philippine Heart Center on triple valve surgeries from January 2008 to December 2012. Medical records of 116 patients were reviewed. Emergency cases and those with concomitant CABG were excluded from the study. Only the preoperative data were collected and analyzed in relation to mortality. **Results:** In-hospital mortality rate was at 12%. The mean age of patients was 40 ± 13 years with male slightly higher in number at 66 (58%) compared to females at 50 (42%). Hypertension was found to be significantly related to mortality (odds ratio 6.0 and p-value 0.002). The echocardiographic parameters such as ejection fraction, left ventricular end-diastolic diameter, left ventricular end-systolic diameter, pulmonary artery pressure and right ventricular fractional area change were not associated with mortality. Higher creatinine levels was associated with mortality was not statistically significant. **Conclusion:** Triple valve surgery is a high risk procedure in itself and adding to the fact that this had to be done in cases like rheumatic heart disease makes this a more challenging operation. Careful preoperative selection is crucial as the close monitoring in the perioperative course of the patient.

PHC.R.005.14

Correlation of Computed Tomography Thoracic Cage Ration with Pulmonary Function Tests in Patients with Chronic Obstructive Pulmonary Disease

Ed Gelmark S. Mercado, MD; Bernadette E. Magnaye, MD; Joseph Leonardo Z. Obusan, MD

Background: Chronic obstructive pulmonary disease is one of the leading causes of mortality in the world. The study was done to determine a correlation between CT thoracic cage ratio and pulmonary function tests in patients with COPD. **Methods:** A cross-sectional study was made involving 54 patients diagnosed with COPD using pulmonary function tests, who also underwent CT scan of the chest. It was conducted at the Philippine Heart Center using information gathered during the period January 2010 to December 2014. Included patients were age 40 years and above, diagnosed with COPD according to the Global Initiative for Chronic Obstructive Pulmonary Disease Guidelines, and underwent pulmonary function tests with chest CT scan with a maximum interval of one year. **Results:** Using Pearson product moment of correlation, there was no significant correlation between thoracic cage ratio and pulmonary function test (FEV1/FVC) with r = 0.0779 for the thoracic cage ratio at the level of the carina and r = -0.1014 for the thoracic cage ratio 5 cm below the carina, where a p-value of 0.05 is considered significant. **Conclusion:** There is no significant correlation between CT thoracic cage ratio and pulmonary function tests in patients with COPD.

PHC.R.006.14

Off-site Diagnosis of Acute Dissecting Aortic Aneurysm through a Video Conference App using A Mobile Smart Phone and a Tablet Device

Niño Anthony P. Tanseco, MD; Alfredo F. Villarosa, MD

Background: The purpose of this study is to determine the agreement of off-site interpretation using a video conference app in a tablet device, and on-site interpretation of CT thoracic aortograms in patients with suspected aortic dissection. **Methods:** An off-site consultant radiologist interpreted pre-selected random CT thoracic aortograms of 31 patients with clinical diagnosis of aortic dissection, using a tablet device through a video conference app. At the other end of the video conference is an in-house radiology resident for which the CT images were broadcasted using a mobile smart phone. Off-site interpretation results were compared to an on-site interprtation results with the use of a standardized data form. Agreement and Kappa coefficients were determined. **Results:** The results showed that there is overall good agreement of the on-site and off-site reports. In detec-

ting the presence of an aneurysm and aortic dissection, agreement were 87% (27/31) for detecting aneurysms and 100% (31/31) for aortic dissections. KAPPA coefficients of 0.73 and 1.0, respectively. Agreement in detecting the type of aneurysm is 87% (27/31) for saccular aneurysms and 90% (28/31) for fusiform aneurysms. There is 93% (30/31) agreement for localizing the aortic dissection in the ascending thoracic aorta and 100% (31/31) in the descending thoracic aorta. **Conclusion:** The off-site interpretations of CT aortograms did not differ significantly from that of the on-site final reports. However, there is slight disagreement in detecting small aneurysms and identifying the type (saccular versus fusiform).

PHC.R.007.14

Contrast-induced Nephropathy in Patients with Normal Serum Creatinine Undergoing Contrast Enhanced Computed Tomography: a comparison of Iodixanol and Iopamidol

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Background: Contrast-induced nephropathy (CIN) is defined as the acute decline in renal function that occurs 48-72 hours after intravascular injection of contrast medium and may be affected by osmolality of the contrast media. This study seeks to compare changes in glomerular filtration rate and incidence of CIN in contrast media of different osmolality. **Methods**: This is a prospective cohort of 90 adult patients with contrast enhanced CT scan using iodixanol (n= 34) or iopamidol (n=56) with a normal baseline serum creatinine. CIN was defined as greater then 25% increase in serum creatinine from baseline or a 0.5 mg/dL (44 umol/L increase in the absolute value within 48-72 hours of intravenous contrast administration. **Results:** There was no association between type of contrast media and incidence of CIN (p=0.39). There is no significant difference in the mean change in serum creatinine and eGFR (Cockcroft-Gault/ MDRD) between the two groups (p=0.224, 0.630, and 0.333 respectively). **Conclusion:** The osmolality of contrast media is not associated with incidence of contrast induced nephropathy.

PHC.R.009.14

Preoperative Risk Factor Analysis for Operative Mortality of Patients who Underwent Mitral Valve Repair in Philippine Heart Center on 2001- 2010

Ali T. Macatanong, MD; Pio Purino, Jr., MD; Samuel Andin, MD

Background: Mitral valve repair is underutilized despite being recommended as procedure of choice for mitral regurgitation. Cardiac surgeons may be less enthusiastic to embark on the procedure due to lack of information that help them in decision-making preoperatively. **Methods:** We retrospectively collected and analyzed the charts of all patients (n=102, mean age: 46 years, 58 males) who underwent mitral valve repair alone or in combination with other cardiac operation from January 2008 to December 2010. Multiple logistic regressions was used to determine the independent effect of each factor with operative mortality. **Results:** The over-all operative mortality is 9%. The risk factors associated with operative mortality are low BMI (OR 066 p= 0.022) low BSA (OR 3.51 p= 0.025), NYHA functional class (OR 3.54 p= 0.022) and low LV EF (OR 0.94 p=0.030). **Conclusion:** Mitral valve repair has excellent operative outcome. However, there are risk factors that influence the operative outcome that surgeons should be aware of for preoperative decision making.

PHC.R.010.14

Predictors of Outcome of Children Undergoing VSD Surgical Closure at Philippine Heart Center: a 5-year review

Joanna E. Zamora-Java, MD; Virginia C. Mappala, MD; Ma. Bernadette A. Azcueta, MD

Background: Repair of isolated ventricular septal defect (VSD) remains to be a reasonably safe and short surgical procedure with advances in surgical techniques, perfusion, and cardiology, and intensive care, complications continue to wave even the simplest of procedures. This study aimed to develop a scoring system predictive of post-operative complications among pediatric patients undergoing surgical repair of VSD. **Methods:** We retrospectively reviewed medical records of children aged 0 to 18 years old who underwent surgical repair of VSD from January

2009 to December 2014. Preoperative risk factors included age, gender, and nutritional status, history of recent infection, presence of cyanosis and/or nail clubbing, characteristic murmur and pulmonic component of second heart sound (P2), arrhythmia, extra-cardiac anomalies/co-morbidities, or other genetic syndrome, and Modified Ross Heart Failure Classification in Children. Laboratory data included white blood cell count and segmenters, 2D echocardiogram, 15-lead ECG and chest radiograph. These parameters were associated with complications observed such as pneumothorax, atelectasis, and infection, pericardial and pleural effusion. **Results:** One hundred forty-eight (57%) out of 259 children developed post-operative complications with pneumothorax (29.72%) being the most frequent complication encountered. Among the clinical variables analysed, only three variables were independently predictive of post-operative complications, namely - Modified Ross Heart Failure Classification in Children (p=0.001), character of P2 (p=0.007) and presence of hypervascularity or congestion in pre-operative chest x-ray (p=0.0 002). ROC analysis arrived at the best minimum cut-off score of 4 points with sensitivity of 16.9% and specificity of 97.3% and positive likelihood ratio of 6.25. The overall accuracy rating of the scoring system is 63.8% (AUC 95% CI 70.5%, 57.1%; St Error 0.034, p=0.0001). **Conclusion:** The use of this proposed scoring index can be straight forward and an effortless way of stratifying pediatric patients who will undergo surgical repair of VSD.

PHC.R.011.14

Outcomes of Patients with Moderate Ischemic Mitral Regurgitation Who Underwent CABG Alone versus CABG with Mitral Valve Surgery

Elmo S. Bombase Jr. MD; Christopher C. Cheng, MD

Background: In our institution, the Philippine Heart Center, there is an increasing number of Filipinos with moderate ischemic mitral regurgitation and the optimal surgical management for these patients remains controversial. Likewise, the benefits of CABG alone and CABG with mitral valve surgery for this subset of patients remain to be defined. This study will provide our institution data comparing CABG alone and CABG with mitral valve surgery. This study aims to provide our surgeons a basis for their preference to perform CABG alone or CABG with mitral valve surgery for patients with moderate ischemic mitral regurgitation. **Methods:** We conducted a 1-year prospective cohort study of patients who were admitted as cases of moderate ischemic MR undergoing CABG alone or CABG with mitral valve surgery. Pre-operative data were recorded including patients' profile and echocardiography findings. Intraoperative data were likewise recorded including the procedure done, intraoperative transesophageal echocardiography findings and bypass time. Post-operative morbidity and mortality rates were recorded. Patients were followed up at the OPD. Follow-up 2D echocardiography were recorded at 2 months post-operative. Statistical analysis was applied to data gathered. **Results:** Analysis of data showed Group B has a 1.28x risk of developing an outcome including morbidities, mortality and residual MR. Though insignificant with p value of 0.583. **Conclusion:** CABG alone is comparable with CABG with mitral valve surgery in patients with moderate ischemic MR in terms of outcomes.

PHC.R.013.14

Factors associated with outcome of CABG in Patients with Severe LV Dysfunction

Neil Christian Villamucho, MD; Christopher C. Cheng, MD

Background: Coronary artery disease (CAD) as defined by Kirklin[2] is significant narrowing of the coronary arteries secondary to arteriosclerosis, which initially is limited to decreased coronary reserve but if severe enough would eventually lead to reduced blood flow to the affected artery and vessel occlusion. Indications for intervention would depend on the patient's clinical presentation, severity of the disease, and status of ventricular function.[3] This study aims to present the clinical outcome of patients with CAD and severe preoperative LV dysfunction after undergoing CABG in our institution. It is also intended to serve as a potential model for further improving patient management, which will allow reliable conclusions on the effects of LV dysfunction consequently reducing long-term disease risks. **Methods:** Patients aged 19-70 years old with severe LV dysfunction from 2010-

2014 who underwent CABG were studied. Severe LV dysfunction was defined as having an EF of <35% based from the STICH Trial.[7] Preoperative, operative and postoperative factors affecting outcome were analyzed. **Results:** A total of fifty patients with impaired left ventricular function (EF< 35) underwent CABG with a male preponderance of 88%. The mean ejection fraction was 28.1 ± 5.3%. In-hospital mortality was 6% (3/49). Diabetes mellitus, with an Odds ratio and p-value of 2.5 and 0.003 respectively, was identified as the most significant factor associated with morbidity/mortality. **Conclusion:** Diabetes Mellitus was the significant factor associated with MACE in patients with severe LV dysfunction undergoing CABG, which contributes to overall morbidity/mortality.

PHC.R.014.14

The Association of Bilirubin with Severity of Coronary Artery Disease

Lorraine Almelor, MD; Ronaldo Estacio, MD

Background: In the last decade there has been strong evidence that bilirubin is a potent endogenous antioxidant that protects against atherosclerosis. A handful of studies have reported an inverse relationship between serum bilirubin level and severity of stable coronary artery disease. However these studies are new, have small populations, and have not been validated by other studies, hence there is need for more research on this topic. **Methods:** This was a cross-sectional study where adult patients admitted for elective coronary angiography at our institution had blood extracted and sent for total and direct serum bilirubin level. Bilirubin levels were then statistically correlated with angiographic severity of stable coronary artery disease as measured by anatomic lesion involvement and TIMI flow grade. **Results:** A total of 160 patients were included in this study, with a mean age of 58 years and a 2:1 male-to-female ratio. Seventy-nine percent were hypertensive and 38% were diabetic. Liver function tests were within normal range. Participants with a high TIMI flow grade of 3 had a mean serum total bilirubin level of 13.00 mmol/L and serum direct bilirubin level of 6.83 mmol/L, while patients with a TIMI flow grade of 2 had levels of 14.28 mmol/L and 5.58 mmol/L for total bilirubin and direct bilirubin, respectively. Participants with normal coronaries had a mean total bilirubin level of 14.43 mmol/L and a mean direct bilirubin level of 7.04 mmol/L, while those with non-obstructive CAD had a mean total bilirubin level of 13.03 mmol/L and a mean direct bilirubin level of 7.39 mmol/L. Mean total bilirubin levels for l-vessel, 2-vessel, and 3-vessel coronary artery disease were 13.72 mmol/L, 12.46 mmol/L, and 11.90 mmol/L, respectively while mean direct bilirubin levels were 7.60 mmol/L, 7.73 mmol/L, and 6.34 mmol/L, respectively. None of these results are statistically significant. **Conclusion:** Serum bilirubin level is not asso ciated with the extent and severity of stable coronary artery disease. However, none of our study results are statistically significant. More participants are needed to provide further power for our study to detect a statistically significant effect.

PHC.R.017.14

The Association Between the Level of COPD Severity and Hyperinflation

Bernadette E. Magnaye, MD: Aileen Guzman-Banzon, MD; Ma. Encarnita Limpin, MD

Background: Chronic obstructive pulmonary disease (COPD) is estimated to affect 10% of the population worldwide and is an important cause of mortality and morbidity. Traditional spirometric measurements such as FEV1 correlate poorly with exercise tolerance and exertional dyspnea that is associated with lung hyperinflation which can be measured by lung volume study. This research identified the presence of hyperinflation and their association even with mild stage and among those with increasing levels of COPD severity. **Methods:** This was a prospective cohort analytic study among COPD patients diagnosed by pulmonary function test with post-bronchodilator study FEV1/FVC ratio of < 0.70, consistent with airflow obstruction. Lung volume study was done among those who do not have lung volume study. An analysis of variance were used for the association of TLC, RV and RV/TLC ratio on the different levels of COPD severity based on GOLD citeria. A p-value of ≤ 0.05 was considered significant. **Results:** Seventy-four patients were included in the study. Fifty-nine patients (80%) were males and 15 (20%) were females. The mean age of the study population was 62 years old with mean

height of 160.01 ± 8.4 cm and weight of 61.43 ± 15.8 kg. Majority of the patients (93%) were smoker, with mean average pack-year-smoker of 30.93 ± 22.1 pack-year. Five patients (7%) who have no smoking history were majority males (4 males and 1 female). The mean FEV1 was 52% predicted in the post-bronchodilator study. Most of the patients were at GOLD 2 with 33 patients (45%), followed by GOLD 3 with 30 patients (40%), then GOLD 4 with 6 patients (8%) and GOLD 1 with 5 patients (7%). Lung volume parameters such as TLC and RV across all stages did not show good association with COPD severity. What was observed was as COPD severity increases, there was also an increasing RV/TLC ratio. However, looking at the changes between one category to the next, the change in RV/TLC was significantly increased between GOLD 1 and 3 (p-value of 0.043) and GOLD 1 and 4 only (p-value of 0.008). **Conclusion:** In conclusion, RV/TLC ratio can serve as a good objective parameter for hyperinflation where the ratio increases in direct association with increasing COPD severity. This association is more significantly noted when COPD patients are in GOLD 3 and 4 category.

PHC.R.020.14

High Sensitivity C-Reactive Protein (hsCRP) as a Biomarker of Treatment Response After the Intensive Phase among Pediatric Patients with Tuberculosis

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Background: Childhood tuberculosis has an increasing incidence worldwide. Its occurrence represents an important event indicating a recent transmission usually from an infectious adult. The identification of a surrogate biomarker for treatment response and risk for poor outcome in tuberculosis will be a beneficial tool in the patient's management. Thus, a biomarker like high sensitivity C-reactive protein (hsCRP) was proposed to be a prognostic marker. **Methods:** Children diagnosed with tuberculosis based on the Philippine Pediatric Society and National Tuberculosis Program guidelines were included in the study. Clinical data were reviewed and recorded, and blood samples were collected for serum hsCRP determination at 2 point of time (before treatment, and after the intensive phase). Data analysis was done using Stata SE version 12. Mean, standard deviation, frequency, percent distribution, paired *T*-test and scatter plot were used. The level of significance is set at 0.05. **Results:** There were 40 subjects diagnosed with pulmonary tuberculosis who participated the study. Twenty-three were male (57.5%) and 17 were female (42.5%). The age ranges from 1 to 18 years with a mean age of 8.6 ± 5.5. Out of the 40 participants, 32 had completed the study. In this study, the analysis of data showed that the level of serum hsCRP after the intensive phase of treatment is significantly lower compared to the level before treatment (p value of 0.0002). On the other hand, body mass index (BMI), which is being used as one of the objective parameters of treatment response in children, demonstrated a statistically significant difference before and after the intensive phase at a p value of 0.0007. High sensitivity C-reactive protein and BMI were indirectly correlated, however, it is statistically insignificant. **Conclusion:** This study has shown that there is a statistically significant lower serum hsCRP level after the intensive phase of treatment among pediatric patients with tuberculosis. It is therefore concluded that hsCRP can be an additional parameter to evaluate treatment response as early as 2 months of treatment.

PHC.R.025.14

Comparison of the GRACE and the TIMI Risk Scores in Predicting the Angiographic Severity of Coronary Artery Disease of Patients with Non-ST Elevation Acute Coronary Syndrome

Bernard Benjamin P. Albano, MD; Josette Cristobal, MD

Background: Risk stratification in non-ST elevation ACS (NSTE-ACS) using the GRACE and the TIMI risk scores is essential as those identified to be high risk patients benefit most from early invasive treatment. These scoring systems should also be able to predict the patients' severity of coronary artery disease (CAD) anatomy because this may modify the management strategy. This study compared the discriminative ability and accuracy of these scoring systems in predicting the severity of CAD lesions in patients with NSTE-ACS. **Methods:** This is a cross-sectional, analytic study involving NSTE-ACS patients admitted to

the Philippine Heart Center from 2006 to 2016. The GRACE and TIMI risk scores were computed and the severity of CAD was established after review of individual coronary angiogram. The discriminative ability of the risk scores were determined using the area under the ROC curve statistics while the predictive accuracies were computed via sensitivity and specificity analyses. **Results:** There were 200 subjects included in this study. The mean age was 70±12 years and majority (69%) were males. Fifty percent (50%) had high risk GRACE score, 59% had high risk TIMI score while 53.5% had severe CAD. The GRACE score had higher discriminatory ability compared to TIMI in identifying severe CAD (AUROC curve score of 0.77 vs. 0.65, p=0.006). Severe CAD was also more accurately predicted by the GRACE score (specificity of 74.2%, sensitivity of 72%) vs. the TIMI (specificity of 61.6%, sensitivity of 68.2%). The cut-off value for GRACE in detecting severe CAD was 138 while that of TIMI was 3. **Conclusion:** The GRACE score identifies severe CAD with higher discriminatory ability and predictive accuracy compared to TIMI, therefore it is the favored risk stratification system to be used in Filipino patients with NSTE-ACS.

PHC.R.027.14

Factors Associated With Recurrence of Acute Coronary Syndrome

Edward Niño J. Gacrama, MD; Luis Raymond Go, MD; Luis Raymond Go, MD

Background: Acute coronary syndrome (ACS) accounts for 2.43 million hospital discharges per year. Patients presenting with ACS represent a heterogeneous group with regard to the severity of coronary atherosclerosis, recurrence and prognosis. Major advances in the management of ACS have emphasized the importance of earlier identification of higher risk patients among whom aggressive approaches to revascularization might improve outcome. The study therefore can provide data regarding the incidence and factors associated with recurrent ischemia. **Methods:** This was a case control study that determined the factors associated with recurrent Acute Coronary Syndrome in patients admitted at the Philippine Heart Center between January 2009 up to December 2014. Patients admitted for first time MI were assigned to the control group. On the other hand, patients admitted for recurrent MI were assigned to the case group. Medical chart review was done to identify predisposing risk factors associated with recurrent MI. Homogeneity of characteristics between two groups was tested using independent *T*-test for quantitative variables or Fisher's exact test for qualitative variables. Predictors of recurrent MI were then determined using Logistic regression analysis. The level of significance (α) was set at 0.05. **Results:** Patients with recurrent MI had a mean age of 70 years while patients diagnosed with MI for the first time had a mean age of 64 years. Patients who presented with recurrent MI had a greater incidence of the following: Diabetes Mellitus (p value 0.000); Congestive Heart Failure (p value 0.003); previous PCI (p value 0.000); and previous CABG (p value 0.000). Patients with recurrent MI were noted to have mean serum creatinine of 0.16 compared to that of control patients who had mean serum creatinine of 0.11 (p value 0.000). In addition, patients with recurrent MI were noted to have a mean TIMI score of 6.57 while the control group only had a mean TIMI score of 3.81 (p value 0.0062). GRACE score (p value 0.0236) was likewise higher, with the re current MI group having a mean score of 145 compared to the mean score of 135 for the control group. The presence of multi-vessel disease (p value of 0.003) with involvement of the left anterior descending artery (p value 0.000) and stent implantation (p value 0.0006) were significantly associated with recurrent MI. **Conclusion:** Results of this study concurred with findings noted in previous studies which identified a history previous MI, the presence of Diabetes Mellitus, and increased age, among others, as significant risk factors associated with recurrent MI. Diagnostic catheterization likewise revealed that recurrent MI was significantly associated with multi-vessel involvement and with involvement of the left anterior descending artery.

PHC.R.029.14

Electrocardiogram – Derived Ejection Fraction Compared with 2D Echocardiogram –Derived Ejection Fraction as a Predictor of Morbidity and Mortality at One, Three and Six Months after Discharge in Patients with Acute Myocardial Infarction

Janine Paola T. Rangel, MD; Gilbert C. Vilela, MD

Noninvasive, convenient and practical means of risk stratification have been important in the management of patients with acute myocardial infarction. Electrocardiogram-derived ejection fraction has been proposed as a readily available means of determining risk for cardiovascular outcomes. This was a prospective cohort study of patients who had acute myocardial infarction admitted from June 1, 2015 to June 30, 2016. Ejection fraction from the patient's baseline electrocardiogram and echocardiogram were compared and correlated with in-hospital morbidity and mortality after discharge. Computed ejection fraction from the ECG formula by Krake[7] yielded a mean of 51%. These results were not statistically different compared to the 2D echocardiogram derived ejection fraction with a mean of 51% ($p > 0.05$). However, 2D echocardiogram derived ejection fraction was more accurate in determining LV function (AUC of 0.82) compared to ECG. While the patients were admitted, 74% of the patients were found to have preserved ejection fraction as computed from the ECG. Occurences of arrhythmia, stroke and renal failure were not statistically different between patients with low EF and preserved EF ($p = >0.05$) but those with low EF had greater odds of developing stroke and renal failure (OR 1.5). On follow-up, mortality was not statistically different between those with low and preserved EF ($p =$ value >0.05). However, those with low EF had greater odds of mortality in the succeeding one, three and six months after hospital discharge (OR >1.0).

PHC.R.031.14

Factors Affecting Outcomes of PTMC Among Patients with Moderate to Severe Mitral Stenosis, with Moderate Mitral Regurgitation on Echocardiogram

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Background: Percutaneous Transvenous Mitral Commissurotomy (PTMC) procedure is best applied to symptomatic patients with moderate-to-severe mitral stenosis (mitral valve area <1.5 cm^2) and favorable mitral valve morphology. The aim of this study is to determine the outcome of patient who underwent PTMC among patients with moderate to severe MS, with moderate MR and to determine the predictors of outcome. **Methods:** This is a retrospective cohort study. A total of 91 subjects were included in the study. Records were reviewed retrospectively among who underwent PTMC admitted from January 2010 up to September 2014. Demographic characteristics were collected such as age, gender, Wilkins Score, co-morbidities, and echocardiographic parameters pre and post PTMC such as mitral valve area, LVEF, mitral valve peak gradient, mitral valve mean gradient and systolic pulmonary arterial pressure. **Results:** A success rate of 79% (72 out of 91 of patients achieved post-procedural MVA >1.5 cm^2 and MVA increase of at least 50%) was achieved among patients with moderate to severe mitral stenosis with moderate mitral regurgitation. Among patients with successful PTMC, 62/91 (86.11%) were all females, the mean age was 39. 25 $\pm$ 11.01 and an average Wilkin Score of 8.2 $\pm$ 0.79. Among those with unsuccessful PTMC, 12 (63%) have atrial fibrillation (p value: 0.05), the mean age was 41.78 $\pm$ 8.4 (p value: 0.96), Wilkins Score of 8.7 $\pm$ 1.0 (p value: 0.03), valve thickness score of 2.2 $\pm$ 0.45 (p value: 0.01), valve calcification score of 2.3 $\pm$ 0.45 (p value : 0.02), LVEF of 59 $\pm$ 10 (p value : 0.02), MVA of 0.66 $\pm$ 0.19/0.67 $\pm$ 0.19 (PHT/PLN) and an SPAP of 68.68 $\pm$ 21.75 (p value:0.06). **Conclusion:** PTMC for mitral stenosis in patients with moderate mitral regurgitation can still be done with favorable outcome provided that the patient is in sinus rhythm, the Wilkins Score is <9, with scattered calcifications only up to the leaflet margins, minimal valve valve thickness, LVEF of > 60% and with a mild to moderate pulmonary hypertension.

PHC.R.033.14

Predictors of Outcome of Patients with Mechanical Prosthetic Valves Treated with Warfarin

Ramil Y. Macapagal MD; Norberto O. Tuaño, MD

Background: Anticoagulation among patients underwent valve replacement with mechanical cal prosthetic valve is necessary to prevent valve thrombosis and thromboembolism. This study attempts to determine the predictors of outcome of patients with mechanical prosthetic valves treated with warfarin and subset of patients taking aspirin. **Methods:** A prospective cohort study, which includes adult patients with mechanical prosthetic valve at the Philippine Heart Center, who has been receiving oral warfarin for their anticoagulation with their prothrombin time-INR (target range) monitored periodically on follow-up. Patients were followed-up if there is optimal anticoagulation, thromboembolism and bleeding episodes. **Results:** A total of 130 patients were included in the study, 74 were males, while 56 were females. The mean age was 43 years old, majority of the patients were diagnosed with rheumatic heart disease (78%) and 38 patients (29%) had double mechanical prosthetic valve position. Ninety-two patients (71%) were on optimal anticoagulation with an INR of 2-3. Eleven patients (8%) had bleeding with a mean INR level of 4.88 ± 3.3 while 6 patients (4.6%) had thromboembolism with a mean INR level of 1.69 ± .37. Among patients who were taking aspirin concomitantly with warfarin, the outcomes for thromboembolism and bleeding predictors were not statistically significant. Diagnosis of rheumatic heart disease shows a trend in favor for bleeding with a p value of 0.045. **Conclusion:** The study showed a low incidence of bleeding and thromboembolism among Filipino patients ages 33 to 57 years old with mechanical prosthetic valve treated with warfarin and among subset of patients taking aspirin. Optimal anticoagulation is still the most important predictor of outcome. Risk assessment for each patient must be individualized with careful appraisal of the risk–benefit profile.

PHC.R.034.14

P Wave Dispersion of Different Stages of Diastolic Dysfunction in Patients with Coronary Artery Disease

John Joseph L. Manalo, MD; Gilbert C. Vilela, MD

Background: Diastolic dysfunction has been implied as the central mechanism in heart failure with preserved ejection fraction. Recently, it has been found that p wave dispersion increases in diastolic dysfunction. This study aims to determine the p wave dispersion among Coronary Artery Disease patients with and without diastolic dysfunction and the relation to its severity. **Methods:** This is a retrospective case control study which included patients with angiographically documented CAD where the cases had Grades 1, 2 or 3 diastolic dysfunction while those with normal diastolic function served as the control. Their echocardiograms and 12 lead ECGs were reviewed and p wave dispersion values determined. **Results:** A total of 118 patients were enrolled, 95 of whom have diastolic dysfunction. The p wave dispersion was 56 ± 14ms in patients with diastolic dysfunction and 48 ± 12ms in those without (0.02). When computed according to the severity, the p wave dispersion values were as follows: 56 ± 14ms for grade I, 49 ± 11ms for grade II, and 60 ± 14ms for grade III (0.01). For patients with concomitant systolic dysfunction, the p wave dispersion was 56 ± 14ms while it was 53 ± 13ms for those without systolic dysfunction (0.37). **Conclusion:** p wave dispersion was significantly increased in patients with diastolic dysfunction compared with values from patients with normal diastolic function. P wave dispersion does not increase progressively with worsening diastolic function. Patients with concomitant systolic dysfunction had higher p wave dispersion values but this increase was not statistically significant.

PHC.R.037.14

Accuracy of 2D Echocardiography in the Diagnosis of Tuberculous Pericardial Effusion

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Background: The incidence of pericardial TB has decreased markedly in the developed world, however, it remains a major problem in third world countries, including the Philippines. A common complication of TB is the development of pericardial effusion. Establishing the etiology of pericardial effusion is necessary before instituting medical or surgical intervention. In this study, we will investigate the diagnostic usefulness of 2D echocardiography, a non-invasive and relatively inexpensive tool in diagnosing tuberculous pericardial effusion and compare it to the gold standard. **Methods:** This is a prospective cross-sectional study done among adult patients admitted at Philippine Heart Center with a diagnosis of pericardial effusion. 2D echocardiogram of these patients were assessed for the presence of the following 1.) pericardial thickening 2.) exudative coating/deposits 3.) fibrin strands. The clinical diagnosis of TB effusion was made by a Tygerberg score of >6. The diagnostic accuracy in predicting tuberculous pericardial effusion by the following parameters were assessed by computing the sensitivity, specificity, positive predictive value and negative predictive value. **Results:** Majority of the patients were female consisting of 64% of the study population with a mean age of 46 ± 15 years old. The presence of fibrin strands (FS) was found to be the most sensitive parameter with a sensitivity of 72% and a positive likelihood ratio of 8. This was followed by pericardial thickening (PT) with a sensitivity of 67%. Exudative coating (EC) on the other hand is the most specific for TB pericarditis, with specificity of 100% (2/41). Combining two parameters was also found to be specific. The presence of FS+PT and EC+PT both yielded a specificity of 96%. Furthermore, the parameter that has the highest positive predictive value was found to be the presence of EC and the highest negative predictive value is the presence of fibrin strands. **Conclusion:** The presence of fibrin strands, thickened pericardium and exudative coating in 2D echocardiogram are accurate diagnostic predictors of tuberculous pericardial effusion. Fibrin strands and thickened pericardium are both sensitive and can be used to rule out the disease. On the other hand, exudative coating is the most specific for tuberculous pericardial effusion and has a potential role in ruling in the disease. Combination of these parameters, FS+PT and EC+PT, yielded a higher specificity which may further strengthen their accuracy.

PHC.R.038.14a

Renal Outcomes of Diabetic Patients with Multi-vessel CAD Undergoing CABG and PCI

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Background: Acute kidney injury (AKI) is a serious complication following coronary revascularization. Diabetes mellitus is a major risk factor for aggressive coronary artery disease. Several studies evaluated PCI and CABG among diabetic patients with multi-vessel CAD, but none compared the two interventions in terms of AKI. This study compared renal outcomes of post-PCI and post-CABG diabetic patients with multi-vessel CAD. **Methods:** This was a retrospective cohort study conducted at the Philippine Heart Center, employing chart review of previously admitted diabetic patients aged 30 to 80, except for the mean age, number of vessel involvement and post-procedural inotropic use. Mean age was 59 ± 9 years for the PCI group and 63±12 years for the CABG group, with male predominance (151/199 or 76%). Majority underwent CABG (123/199 or 62%). Mean eGFR was 74 ± 23 ml/min and 76 ± 20 ml/min for the PCI and CABG group, respectively. The odds of developing AKI is twice higher in multi-vessel CAD patients undergoing CABG versus PCI (p=0.098), and thrice higher post-CABG versus PCI after adjustment for age and history of ACS (p = 0.020). **Conclusion:** Diabetic patients with multi-vessel CAD are more likely to develop AKI post-CABG than post-PCI when adjusted for age and prior ACS.

PHC.R.038.14b

Validation of Risk Stratification in Acute Decompensated Heart Failure: The Classification and Regression Tree (CART) Analysis Model, at the Philippine Heart Center

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Background: Acute Decompensated Heart Failure is a major burden worldwide; with in-hospital mortality ranging between 3% - 7%, there has been interest for risk stratification models for prognostication purposes. Using data from the Acute Decompensated Heart Failure National Registry (ADHERE), Greg Fonorow and associates were able to identify the best predictors of in-hospital mortality using classification and regression (CART) analysis and developed a risk stratification model.[2] These parameters are serum creatinine, blood urea nitrogen, and systolic blood pressure. However, because the registry from which it was based was primarily composed of Caucasians and African-Americans; it is unclear whether it can be applied to Filipinos. The objective of the study was to determine whether the CART analysis model can be applied in the local setting. **Methods:** The author conducted a prospective cohort involving 334 patients admitted at the Philippine Heart Center for acute decompensated heart failure. In accordance with the CART analysis model, patients were categorized into 5 risk groups based on serum blood urea nitrogen, serum creatinine, and systolic blood pressure determined on admission. These 5 groups, in order of increasing mortality risk are: low, intermediate 3, intermediate 2, intermediate 1, and high risk groups. The patients were followed-up from the time of admission at the Emergency Room until hospital discharge, hospital transfer or in-hospital death. **Results:** 40 patients expired out of the 334 patients enrolled in the study. All of the independent variables in this study showed significant difference (p-value <0.005) in terms of mortality; with higher serum BUN and creatinine and lower systolic blood pressure portending higher mortality rates. In terms of risk groups, there was increasing mortality rate from low to high risk groups. The odds ratio for mortality risk was 3.84 for higher risk groups with a p-value of <0.005. Hosmer-Lemeshow was tested for validation of the risk stratification; and was found to be at 0.70. The area under the curve (ROC) range at 95% confidence interval was between 0.76252 and 0.89105, with mean of 0.8268; indicating good accuracy. **Conclusion:** The Classification and Regression Tree (CART) analysis model can be used in the local setting for risk stratification of patients admitted for acute decompensated heart failure.

PHC.R.040.14

Prognostic Value of Myocardial Perfusion Spect Imaging Over Duke Treadmill Score in Predicting Major Adverse Events

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Background: Myocardial perfusion scintigraphy (MPS) is an important tool in the diagnosis of ischemic heart disease. Its other uses include prognostication, risk stratification and assessment of viability. Treadmill exercise has been used as screening tool for ischemic heart disease. Duke Treadmill Score (DTS) was formulated to stratify patients into low, intermediate and high risk based on the duration of exercise and the presence or absence of ECG changes and angina. This study aims to determine which of among the two modalities would be better prognostic tool. **Methods:** Filipino adult patients with known or suspected CAD were included in the study. Exclusion criteria are those with recent MI, recent revascularization or those with heart failure or critical illness. The patient underwent treadmill exercise test and subsequent myocardial perfusion scintigraphy. The Duke treadmill score was obtained after exercise and the summed stress score (SSS) was obtained in the scinitgraphic images. The patients were followed for 12 months for the development of major adverse events. The ROC area of SSS and DTS were computed using STATA 13 software and compared. **Results:** A total of 97 patients were included in the study. The mean age was 52 years, majority were male. Five events were noted within 11.8 months of follow-up. The SSS has a higher ROC curve (0.9707) compared to DTS (0.9033) but did not reached statistical significance (p=0.0998). **Conclusion:** There is a trend favoring SSS of MPS more than the DTS as a better predictor of MACE among patients suspected or with known CAD; however no

statistical significance was reached because of few outcomes due to a short length of follow-up. Worsening of the SSS or DTS was strongly correlated with the development of adverse cardiac events.

PHC.R.041.14

Relationship of Arterial-Venous CO_2 Gap on Outcome of Coronary Artery Bypass Graft Patients

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Objective: Coronary artery bypass graft (CABG) patients are subjected to controlled hypoperfusion during surgery, particularly during cardiopulmonary bypass. In search of parameters to monitor the effects on tissue perfusion and circulation and predict outcomes of these patients, the researcher aimed to determine the relation ship of $AVC0_2$ gap with post-operative complications post-CABG. **Methods:** This is a cohort study of seventy (70) CABG patients. They were grouped according to the arterial venous $C0_2$ ($AVC0_2$) gap: <5mmHg and >5mmHg, and analyzed as to their postoperative outcomes. The homogeneity of patient characteristics between groups was tested using independent *T*-Test. The association between $AVC0_2$ gap and outcomes were determined and tested using logistic regression analysis. **Results:** Baseline characteristics of subjects were comparable. Thirty-two patients (45.7%) were observed to have post-operative complications. 71.9% (23/32) were noted to have $AVC0_2$ gap of >5mmHg with odds ratio of 1.49 ($p = 0.44$). However, the length of ICD stay and hospital stay had no association ($p = 0.13$ and $p = 0.10$ respectively) **Conclusion:** There is no relationship between arterial-venous $C0_2$ gap and postoperative complications of patients who underwent coronary artery bypass grafting.

PHC.R.044.14

Pre-Operative Aortic Balloon Occusion in Ruptured Abdominal Aortic Aneurysm vs. Aortic Clamping

Sheila Rose A. Emboltorio, MD; Marvin Martinez, MD; Nelson Lee, MD

Background: Ruptured abdominal aortic aneurysm is a surgical emergency that carries with it a high rate of mortality and morbidity. Even with the latest advances in technology, the mortality rate reaches 50 to 80%. The aim of this study is to show that pre-operative aortic balloon occlusion in ruptured abdominal aortic aneurysm can decrease the morbidity and mortality rate. **Methods:** This is a retrospective cohort study that involves a total of 29 patients admitted in our institution from January 1, 2013 to October 31, 2014, diagnosed with ruptured abdominal aortic aneurysm. All subjects underwent open repair, with the 8 of which had pre-operative aortic balloon occlusion done prior to induction of anesthesia. Twenty-one subjects had straight open repair. All pre-operative aortic balloon occlusion were done in a standard manner. **Results:** All subjects who underwent pre-operative aortic balloon occlusion had a 100% survival rate, with a 25% acute renal injury rate. This included the transient rise in serum creatinine level. Whereas in the group with no pre-operative aortic balloon occlusion, the mortality rate was 4.76% for table death and a 28.57% for post-operative death. 33.33% had a transient increase in serum creatinine while 28.57 % required hemodialysis. **Conclusion:** The use of pre-operative aortic balloon occlusion in the repair of ruptured abdominal aortic aneurysm de creases the mortality and morbidity rates. It is a safe procedure that can be done in a fast manner and is life saving.

PHC.R.003.15

Tetralogy of Fallot: Clinical Course of Post-Operative Total Correction a Ten-Year Follow-up

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Background: Early operative outcome of Tetralogy of Fallot (TOF) was excellent. However, long-term complications for patients following TOF correction was still an issue. The objective of this study was to determine the post-operative complications ten years after total repair of Tetralogy of Fallot. **Methods:** A retrospective ten year follow-up among pediatric patients admitted at the Philippine Heart Center from year 2000 to 2005 who underwent Tetralogy of Fallot correction. **Result:** With a total of 41 subjects, the median for timing of TOF repair was l.9 years old. Twenty-four percent of the total correction involved trans-annular patching, while 9.8% had creation of monocusp of the pulmonary valve. Complications after TOF repair with transannular patching included mild pulmonary regurgitation (57%), mild residual RVOT obstruction (28%), reoperation (7%), and pulmonary valve replacement (PVR) (14%). After PVR, follow-up echocardiography showed mild PR, and improved right ventricular systolic function. Without transannular patching, echocardiographic finding showed mild PR (41%) and no residual right ventricular outflow tract obsruction (32%). Complete heart block (9%) and reoperation (4.5%) were also noted as complications after transannular patching. **Conclusion:** Although, majority of the population are asymptomatic ten years after TOF repair, thorough clinical assessment along with diagnostic work-up should be done regularly to monitor development of possible complications.

PHC.R.007.15

Diagnostic Accuracy of Medistinal Width Measurements on Chest X-ray in the Recognition of Acute Thoracic Aortic Dissection

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Background: Accurate assessment of aortic dissection can be made with CT but its utility in the emergency setting in patients with acute thoracic complaints limits its use due to practical reasons. The study aims to examine the accuracy and diagnostic value chest x-ray in identifying thoracic aortic dissection. **Methods:** The study included 70 patients with clinical suspicion of having aortic dissection. Radiographic measurements including mediastinal width and left mediastinal width were employed to assess widening of the superior mediastinum. Cut-off value of 8. 65 for MW and 5.45 LMW were set. CT aortogram was the gold standard used to identify the presence of dissection. **Results:** For MW with measurements, using 8.65 as cut-off value, the following diagnostic test values were obtained: sensitivity of 18%, specificity of 76%, PPV of 40%, NPV of 51%, PLR of 0.77, and NLR of 1.07. LMW, using 5.45 as cut-off value, the following diagnostic test values were obtained: sensitivity of 51%, specificity of 43%, PPV of 45%, NPV of 50%, PLR of 0.91, and NLR of 1.17. **Conclusion:** Mediastinal width measurements obtained from AP chest radiographs have low diagnostic power in predicting the presence of aortic dissection. In such cases where there is high suspicion for this pathology, CT aortogram remains the most reliable modality.

PHC.R.009.15

Correlation Between Sonographic Grading of Hepatic Steatosis and Serum LDL Level

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Background: Fatty liver (steatosis) is caused by build-up of triglycerides and other lipids in hepatocytes (1).This study was made to correlate serum LDL levels with the sonographic degree of hepatic steatosis among Filipino adults seen at the Philippine Heart Center. **Methods:** A total of 59 subjects were recruited in the study based on the inclusion and exclusion criteria. Three radiologists evaluated the liver ultrasound images and categorized them as normal, mild, moderate or severe hepatic steatosis. The images were captured using a Philips IU22 sonogram machine with 50% gain setting. Serum LDL levels within one month of the ultrasound examinations were correlated with the degree of hepatic steatosis. **Results:** Mean LDL levels in mmol/L were 2.73 ± 0.608 in the normal

subjects, 3.36 ± 1.015 in the mild hepatic steatosis group, 3.21 ± -0.806 in the oderate hepatic steatosis subjects, and 3.80 ± 0.700 in the severe hepatic steatosis group (p value is 0.054). Age, BMI, co-morbidities (dyslipidemia and hypertension), and patients taking calcium-channel blockers showed the following p values, 0.008, 0.002, 0.001, 0.002, and 0.007, respectively. Scatter plot showed that as LDL serum level increases, an increase in the degree of hepatic steatosis is also noted with Rho of 0.3037 and p value of 0.0194. **Conclusion:** A weak positive correlation between serum LDL level and degree of hepatic steatosis was established.

PHC.R.013.15a

Clinical Profile of Patients with Non-Ischemic Cardiomyopathy Admitted at Philippine Heart Center

Jasmin H. Ampong, MD; James Ho, MD

Backgorund: Non-ischemic cardiomyopathy represents a heterogenous group of diseases that often lead to progressive heart failure with significant mortality and morbidity. The improved recognition, the incidence and prevalence of heart failure due to non-ischemic cardiomyopathy appears to be increasing. This study was conducted to determine the clinical profile of patients with non-ischemic cardiomyopathies admitted at Philippine Heart Center (PHC) in 2013. **Methods:** It is a retrospective, descriptive study of patients with age >19 years admitted in the medical intensive care unit and ward of PHC. A total of 187 subjects were included in the study. Proforma included age, gender, presenting complaints, past history, history of medications clinical examination and echocardiographic findings. **Results:** Majority were 40-65 years of age (57%), with a mean age of 51.2 years. Most of them are males (75.40%) and dilated cardiomyopathy (idiopathic) as the most common form. Breathlessness was the most common chief complaint (57.75%) followed by easy fatigability (13.90%). Ten patients died during hospitalization while 177 were discharged in a stable condition. **Conclusion:** This study provide a baseline local data of the clinical profile of patients with non-ischemic cardiomyopathies for further research and better understanding of the disease.

PHC.R.013.15b

Clinical Utility of Using Lower Troponin I Cut-Off Values for Point-Of-Care Testing in Patients with Myocardial Infarction in a Cardiovascular Center

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Background: Troponin point-of-care assays do not achieve a comparable level of analytical sensitivity, compared to cardiac troponin assays measured in a central laboratory, when either the 10% CV or the 99th percentile of a healthy population is used as the cut-off. **Methods:** We compared 2 point-of-care assays for Troponin I with a central laboratory assay in 86 subjects presenting with acute coronary syndrome (ACS) in a cardiovascular center. **Results:** Using the published cut-offs the sensitivity, specificity, PPV and NPV of i-STAT were 75%, 100%, 100% and 72%. The sensitivity, specificity, PPV and NPV of PATHFAST were 84.62%, 100%, 100% and 80.9 5%. Using decreased cut-offs, sensitivity and PPV increased for both assays to 80.77% and 77.27% for i-STAT and 86.54% and 82.93% for PATHFAST. Furthermore, sensitivity and PPV of both POC analyzers improved when tested using female specific cut-offs of central laboratory assay. Clinical review showed i-STAT using published cut-off missed 1 patient with confirmed MI and that a lower cut-off allowed its detection. There were 41 clinically diagnosed Myocardial Infarction cases and additional 12 more patients detected as positive by hsTnI, mostly females (n=10, 83%). **Conclusion:** By decreasing the cut-offs of POC analyzers, clinical sensitivity that allows us to identify undisclosed Troponin elevations in additional patients that warrant further investigation. The hsTnI assay identified more female with minimal troponin elevations compared to POC assays which raises our concerns that these female subjects may have been overdiagnosed by hsTnI or clinically underdiagnosed.

PHC.R.017.15

Anthropometric Measurements as a Screen ing for Obstructive Sleep Apnea Among Employees of Philippine Heart Center

Mander L. Cambonga, MD; Aileen G. Banzon, MD; Ma. Encarnita B. Limpin, MD

Objective: Obesity is a key risk factor for the development of OSA and if undiagnosed and untreated, may lead to serious complications. This study aims to determine the association of anthropometric measurements with risk for OSA, through utilization Berlin Questionnaire, among employees of Philippine Heart Center. **Methods:** This is a cross-sectional study conducted at the Philippine Heart Center. Employees of the Philippine Heart Center participants. Anthropometric measurements of 260 subjects were obtained and was assessed for high risk for OSA through Berlin questionnaire. Result: Subjects who were high risk for OSA based on the Berlin Questionnaire were significantly more likely than those at low risk to have a n increased weight 73.9 ± 15.1 vs. low risk 64.3 ± 13.2 (p value <0.001), increased BMI 28.5 ± 4.09 vs. low risk 24.5 ± 4.1 (p value <0.001); bigger neck circumference 36.9 ± 3.7 vs low risk 34.9 ± 3.8 (p value 0.0003), larger waist circumference 91.8 ± 10.5 vs. low risk 82.4 ± 12.7 (p value <0.001), greater hip circumference 102.9 ± 8.4 vs low risk 95.8 ± 10.7 (p value <0.001) and thigh circumference 56.8 ± 6.3 vs. low risk 53.5 ± 8.5 (p value 0.0053). Increased BMI, waist circumference and waist to hip ratio were statistically significant risk factor for OSA **Conclusion:** Anthropometric measurements such as increased BMI, WC, WHR and snoring behavior, day time sleepiness or fatigue and the presence of obesity or hypertension can be high risk for OSA thus, only those patients would be cost effectively requested for sleep study for definitive and diagnosis and treatment.

PHC.R.018.15

Association of Serum Uric Acid Levels and Outcomes of Patients with Chronic Obstructive Pulmonary Disease: a Prospective Cohort Study

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Background: Chronic obstructive pulmonary disease (COPD) is one of the leading causes of morbidity and mortality with increasing prevalence worldwide. Changes in oxygen tension such as hypoxia, has been found to modulate the release of purine metabolites such as uric acid. Serum uric acid increases significantly during hypoxia. Elevated uric acid levels have been associated with the presence of systemic inflammtion and increased cardiovascular risk. Also, it could serve as a non-invasive indicator for COPD severity. **Methods:** This is a prospective cohort analytic study among COPD in exacerbation patients at Philippine Heart Center. Serum uric acid level determination was done as part of the routine blood tests obtained during admission. Patients were followed-up until discharge and through a telephone conver sation 30 days after discharge to determine mortality. Fisher's exact analysis used to determine the association between elevated serum uric acid level and mortality and independent *T*-test was used to determine the length of hospitalization, ICU stay and NIV use ween patients with low and high serum uric acid levels. A p-value of ≤ 0.05 was considered significant. **Results:** A total of 159 patients were included in the study. Fifty-seven patients (57%) were males and forty-three (43 %) were females. The mean age of the study population was 69 years old. Majority of the patients (91%) were smoker with mean average pack-year-smoker of 25.57 $\pm$ 9.03 pack-year. One hundred forty-four (91%) has no PTB treatment. Majority of the patients (66%) were hypertensive with GOLD Classification C (55%). Patients with high serum uric acid levels required more prolonged hospitalization with a mean average hospital stay was 16.38 $\pm$ 6.58 days and presented higher rates of 30-day mortality. Moreover, patients with high serum uric acid levels required noninvasive ventilation (NIV) which were both statistically significant (p 0.005 and p <0.001 respectively). **Conclusion:** Elevated serum uric acid levels on admission among patients with COPD in exacerbation are associated with increased 30-day mortality and increased risk of NIV use.

PHC.R.019.15

Correlation of Fractional Exhaled Nitric Oxide (FeNO) Level with Severity of Chronic Obstructive Pulmonary Disease (COPD)

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Background: Fractional exhaled nitric oxide is being used for marker of inflammation in disease activity of different lung disease. COPD is a progressive airflow obstruction with neutrophilic inflammation. We measure FeNO level in documented COPD patient whether the FeNO level is related with the severity of COPD. **Methods:** We measure the FeNO level of patient diagnosed with COPD thru spirometry and correlate if the FeNO level with the severity of the COPD as dictate by the lung function. **Results:** We enrolled 35 COPD patients and categorized them based on combined Gold model of symptom. Exhaled nitric oxide level were significantly higher in COPD Gold D (38.5 $\pm$ 7.7 ppb) as compare with COPD Gold A (23.4 $\pm$ 1.14 ppb). However, FeNO level showed weak inverse correlation with lung function assessment by % predicted FEV1($r = 0.21$, $p = 0.231$). **Conclusion:** We conclude that FeNO may be used as marker and to monitor its disease activity.

PHC.R.026.15

Validation of the Echo Heart Failure Score in Predicting Major Adverse Cardiac Events Among Patients with Heart Failure

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Background: Echocardiography is a routine diagnostic procedure among heart failure patients and became one of the sources for the development of several prognostic models. This study aims to validate the results of the study of Carluccio et. al which utilizes the Echo Heart Failure Score (EHFS). **Methods:** This is a prospective cohort study involving 120 consecutive adults with systolic heart failure. Their 2D echocardiography was reviewed and scored using EHFS. They were followed-up for 6 months for the occurrence of MACE. **Results:** Twenty-eight (23.3%) patients had EHFS $\geq$3 while 92 (76.7%) had EHFS <3. MACE occurred in 26 patients (21.67%) (21 in EFHS $\geq$3, 5 in EHFS <3). The sensitivity, specificity, positive predictive value, negative predictive value, positive likelihood ratio, and negative likelihood ratio are 80.77%, 92.55%, 75%, 94.5, 7%, 10.85, and 0.21 respectively. The accuracy is 86.66%. **Conclusion:** EHFS was found to be accurate in predicting major adverse cardiac events in patients with systolic heart failure. Patients with EHFS $\geq$3 had a higher probability of developing MACE.

PHC.R.031.15

Association of Clinical Characteristics and Electrocardiographic Changes with presence of Multivessel disease versus Single-Vessel disease among patients with ST Elevation Myocardial Infarction-Acute Coronary Syndrome (STEMI-ACS)

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Background: Multivessel disease (MVD) is found in approximately half of patients with ST Elevation Myocardial Infarction-Acute Coronary Syndrome (STEMI-ACS) undergoing primary Percutaneous Coronary Intervention (PCI) and is associated with a worse prognosis. This study aimed to assess whether certain clinical parameters and certain electrocardiogram pattern can be used to predict presence of MVD in STEMI-ACS patients. **Methods:** This is a prospective cohort study of STEMI-ACS patients that determined predictors of MVD among admission electrocardiogram (ECG) patterns, history, and clinical parameters. **Results:** Among the 96 STEMI-ACS patients, 51% has MVD. Older age and hypertension were significant predictors of MVD (OR 1.05 and 3.14, respectively). LAD was the most common culprit artery among SVD group (72%), while RCA among the MVD group (51%). ECG pattern was comparable between MVD and SVD, but subtle changes and trends were observed between the two groups. The total ST elevation was consistently higher in MVD group compared to SVD group per culprit artery but was not statistically significant. Among RCA subgroup, significant ECG predictors of MVD were positive V1 and negative V6 as compared to SVD which showed opposite vector patterns in ECG; other non-significant ECG trends

favoring MVD were higher mean STE in leads V2-V6 and lesser reciprocal change (ST depression in inferior leads) in LAD culprit artery group; and higher mean STE in V5 and V6 among LCX culprit artery group. A negative V5 and V6 can differentiate a RCA MVD from LCX MVD. **Conclusion:** Some clinical characteristics and admission ECG can be used to predict presence of MVD to guide in decision-making and prognosis.

PHC.R.032.15

Validation of a Predictive Score for Radial Artery Spasm in Patients Undergoing Elective Transradial Percutaneous Coronary Procedures

Joseph Michael L. Ramirez, MD; James Ho, MD

Background: Radial artery spasm (RAS) is one of the most common complications during transradial coronary procedures. It can increase access-site-related adverse events. There is no standard tool to determine who are at high risk for RAS and would benefit from intensive spasm-preventive measures. This study aims to validate a RAS risk score in patients undergoing elective transradial coronary procedures. **Methods:** We prospectively enrolled 210 consecutive patients who underwent elective coronary angiography and PCI via transradial access. Patients were classified as high or low risk based on their RAS risk score. Spasm incidence was recorded. The sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of the RAS risk score were determined. **Results:** RAS incidence was 11.43%. More patients who had RAS were females ($p = 0.023$), weighed less (64.4 ± 9.20 kg, $p = 0.0353$), had lower BMIs (19.9 ± 2.32, $p = 0.0512$), were current smokers ($p = 0.031$) and had PAD ($p = 0.000$). Age, height, co-morbidities (hypertension, DM, and dyslipidemia), renal status, type of procedure done, or size of the radial sheaths were not related to RAS. The RAS risk score had a sensitivity, specificity, PPV, NPV of 54.17%, 92.47%, 48.15%, 93.99% and 73.32% respectively. The c-statistic is 0.8073 (ROC analysis). **Conclusion:** The RAS risk score is a good tool to identify a high spasm risk patient subgroup in whom more intensive spasm-preventive measures could be done to potentially achieve significant reduction in RAS associated access-site-related adverse events.

PHC.R.035.15

Association of Post-Procedural Echocardiographic Parameters with Outcomes in Rheumatic Mitral Stenosis with Aortic Valve Involvement Post-PTMC

Lilian Ville E. Bacalso, MD; Sharon Marisse A. Lacson, MD

Background: Studies for PTMC limited to the study of mitral valve had made challenges to the study of multivalve lesions that includes the aortic valve. Clinical outcomes in Rheumatic mitral stenosis (MS) post PTMC with aortic valve involvement must have an association with echocardiographic factors that would guide clinicians in prognostication. This study aims to demonstrate the association between the echocardiographic parameters of Rheumatic MS patients with aortic valve involvement with 1-year composite clinical outcome of patients who underwent PTMC. **Methods:** This is a cohort study that included all patients, 19-65 years old, diagnosed with Rheumatic MS with aortic valve involvement, who underwent PTMC. Immediate 2D echocardiography of patients done post-PTMC was reviewed. Patients were then followed-up and composite clinical outcomes noted which may include major adverse cardiac events, stroke, infective endocarditis and surgical operation were noted. **Results:** The study included 72 patients who were grouped based on the presence or absence of composite clinical outcomes. Fifteen patients were noted in the group with composite clinical outcome. There is a statistically significant association of composite clinical outcome with the following echocardiographic factors: abnormal left atrial volume index with of OR 1.26 (95% CI = 1.08 to 1.48), $p = 0.003$, presence of aortic regurgitation with OR of 42 (95% CI = 5.0 to 352), $p=0.001$, particularly those with mild regurgitation, and those with abnormal aortic valve area with OR of 10 (95% CI = 1.63 to 61.5), $p = 0.013$, and aortic valve gradient with OR of 10 (95% CI = 1.63 to 61.5), $p = 0.013$. **Conclusion:** This study showed that abnormal left atrial volume index, presence of aortic regurgitation with abnormal aortic valve area and gradients immediately post-PTMC is associated with composite clinical outcomes.

PHC.R.037.15

Predictors of Resuscitation Outcomes with Global Assessment of Neurologic status and Overall Survival in Sudden Cardiac Arrest (PROGNOSIS Cardiac Arrest): a prospective cohort study

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Background: Global survival rates from out-of-hospital cardiac arrest (OHCA) remains poor. Factors predicting favorable outcomes are variable across different studies. The primary outcome of this study was to identify predictors of survival in OHCA. **Methods:** This prospective cohort study included adult patients who had OHCA. Clinical profiles and Utstein based factors were identified and predictors of survival were determined with corresponding neurologic outcomes. **Results:** Of the 209 subjects, mean age was 62 years, majority were males, had witnessed arrest, during morning hours, on Thursdays, at the place of residence, and had co-morbidities. Only 12% received pre-hospital CPR and <1% had AED administration. The most common initial rhythm was asystole. The mean arrest-to hospital time interval and the mean initial-in-hospital CPR duration were 25 minutes and 30 minutes respectivetly. The survival rate was 26.3% at 20 minutes, 12.0% at 24 hours, 4.8% at 7 days, and 2.4% at 30 days. Neurologic outcome was poor across all time intervals. Three variables significantly predicted 20-minute survival: initial rhythm of VF (OR 6.64, CI 1.56 to 28.17, p = 0.010), arrest-to-hospital arrival time interval of ≤ 10 minutes (OR 12.02, CI 4.12 to 35.06, p = <0.001), and initialy in-hospital CPR duration of ≤ 20 minutes (OR 33 .89, CI 12.43 to 92.42, p = <0.001). **Conclusion:** Overall survival of OHCA remains dismal and was associated with poor neurologic outcome. Initial rhythm of VF, arrest-to-hospital arrival time interval of ≤ 10 minutes, and initial-in-hospital CPR duration of ≤ 20 minutes were positive predictors of survival.

PHC.R.039.15

Clinical Profile of Congenital Heart Disease in Adolescents and Adults Ages 16 to 21 Years Old in the Philippine Heart Center: Early Experience of Grown-up Congenital Clinic

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B**ackground:** Congenital heart disease (CHD) is a chronic illness with a high frequency in the worldwide population, and is normally diagnosed at birth or in utero. Because of better conditions in diagnosis and early medical and surgical treatment, patients have survival rates of 90% and go further in life, facing different challenges in life's cycle. **Methods:** A descriptive study was conducted at the Out-Patient Department of the Philippine Heart Center from January 2014 to December 2014, among adolescent and adult patient's ages 16-21 years of age with Congenital Heart Disease were included. Demographic profile was noted. **Results:** From this study it can be seen that most of the patients are 16 years old, more males than females and in the high school level. Among the congenital heart disease, the most common is Ventricular Septal Defect. The least common are Pentalogy of Fallot and PAPV-R. Majority of the patients with congenital heart disease (55.09%) did not undergo surgery. **Conclusion:** On profile, most of the patients are male, in the adolescent age and in the high school level. Conservative ways of treatment were observed in most patients with congenital heart disease as there were more patients who did not undergo surgery.

PHC.R.043.15

Predictors of Mortality in Filipinos with Acute Limb Ischemia III Undergoing Limb Amputation and Femoral Embolectomy

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Background: Acute Limb Ischemia remains to one of the most challenging vascular emergencies in the Philippines. In our institution, Philippine Heart Center, we have documented high rates of morbidity and mortality for patients with Acute Limb Ischemia III. Despite this, no study has been made on the identification of risk factors and determinants of outcomes in this subset of patients. The primary objective of this study is to determine the predictors of mortality in Filipinos with Acute Limb Ischemia III undergoing emergency limb amputation with femoral embolectomy. **Methods:** We conduct a 5-year retrospective study of patients who were

admitted as cases of ALI III and underwent emergency limb amputation with femoral embolectomy. Several variables will be recorded and reviewed including: age, gender, vital signs on arrival, presence of risk factors (DM, hypertension, coronary artery disease significant smoking history), and renal function on admission (presence of nephropathy and creatinine levels). **Results:** Forty-three patients were recruited in the study with mean age of 63. Twenty were case of mortality and 23 were discharged improved. The variables that were found to be statistically significant as predictors of mortality with p value of <0.05 were hypertension (p <0.002), diabetes mellitus (p <0.028), coronary artery disease (p <0.001), nephropathy (0.016), smoking (0.048) and increased WBC count (p = 0.001). Advanced age, gender and patients' vital signs upon arrival and creatinine levels were found to be insignificant predictors of mortality with p values of 0.318, 0.337, 0.740 and 0.397 respectively. **Conclusion:** The presence of risk factors including Hypertension, Diabetes Mellitus, Coronary Artery Disease, Nephropathy, smoking history and increased WBC count are the predictors of mortality in Filipinos with Acute Limb Ischemia III undergoing emergency limb amputation with femoral embolectomy. While advanced age, gender, patients' vital signs and creatinine levels on arrival do not contribute to mortality.

PHC.R.047.15

Outcomes of Patients with Severe Pulmonary Hypertension and Mitral Valve Stenosis Following Mitral Valve Surgery in Philippine Heart Center

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Background: Patients with mitral valve disease and concomitant severe pulmonary hypertension are less likely to survive mitral valve surgery. However, because of its potential benefits, these patients should not be refused surgery. **Methods:** In this study, 19 patients with primary mitral stenosis and severe pulmonary hypertension who underwent mitral valve surgery at the Philippine Heart Center between 2011 and 2014 were studied for perioperative survival. A chart review was conducted and each patient was described according to the NYHA functional class, presence of atrial fibrillation, acute manifestation, right-sided heart failure, presence of concomitant valve lesions and type of surgery done. Hemodynamic parameters pre-and post-operatively were also recorded. **Results:** Among all patients, 53% have acute manifestation but are not in cardiogenic shock. Signs and symptoms of right-sided heart failure were present in 11% of the patients. Majority (68%) was in NYHA functional class II. The mean pulmonary artery systolic pressure was 90±19 mmHg (range, 60 to 137 mmHg), with significant decrease post-operatively. **Conclusion:** Ultimately, perioerative risk for mitral valve surgery is increased but is acceptable, and acute presentation and right-sided heart failure are the two parameters that significantly affect morbidity and mortality.

PHC.R.049.15

Association of Central Venous Oxygen Saturation ($SCVO_2$) on the Perioperative Outcome Among TOF Patients Undergoing Both Palliative and Corrective Surgical Procedures

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Background: $SCV0_2$ is an indicator that is affected by four factors, namely, cardiac output, hemoglobin, oxygenation and oxygen consumption. Perioperatively, anesthesiologists/ pediatric intensivists make use of the traditional parameters of hemodynamic stability as basis for the administration or use of inotropic drugs, giving blood products and setting the mechanical ventilation without direct consideration on oxygen consumption which may be accessed through venous oximetry such as $SCV0_2$ values. **Objectives:** This study main aimed to describe the trend of $SCV0_2$ values among TOF patients undergoing either palliative or corrective surgery. **Methods:** This is a prospective cohort study involving 67 patients aged 3-12 years old undergoing either palliative or corrective surgery for Tetralogy of Fallot. $SCVO_2$ were determined

on the following intervals: baseline (after induction on placement of central line, prior to sternotomy), on CPB, rewarming before off CPB, 6th hour SICU, and before extubation. The following are outcomes observed: Mortality, prolonged weaning time from CPB, prolonged extubation time, prolonged SICU stay, number of pressors, increased blood products given. **Results:** The cut-off values are as follows: pre - CPB is 70.2 (p= 0.012 AUC 0.68), CPB 81.3 (p=0.88 AUC 0.51), before off CPB 79.5 (p=0.67 AUC 0.54), 6th hour SICU 75.4 (p=0.00 AUC 0.85) and before extubation 77.8 (p= 0.00 AUC 0.704). Pre CPB, 6th hour SICU stay and before extubation are significant to outcomes with p values below 0.05. These significant time points have the highest area under the curve value of 0.681, 0.856 and 0.704 respectively. **Conclusion:** The $SCVO_2$ values taken pre bypass, 6th hour SICU and before extubation demonstrate a significant association in the outcome of TOF patients undergoing palliative or total correction.

PHC.R.050.15

Valve Sparing Aortic Root Surgery via Aortic Root Remolding with External Root Annuloplasty: Preliminary Results in a Single Institution

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Background: Aortic root pathology can result in changes in the geometry of the sinutubular junction, sinuses, and the ventricular-aortic junction, leading to development of ascending aortic aneurysms, which may be distinct from aortic root disease producing aortic regurgitation, but may present as a combination of morphologic manifestations. Standard surgical procedure involved composite valve and graft replacement. This study was undertaken using Lansac's aortic root remodeling with external root annuloplasty to preserve the native aortic valve of patients with aortic root aneurysms with or without dissection. We sought to describe the early outcomes of patients undergoing this procedure and whether the preservation of the aortic valve affected survival. **Methods:** A total of 7 patients underwent valve sparing aortic root surgery via aortic root remodeling with external root annuloplasty. We reviewed the clinical material, operation methods, echocardiography check during operation and at discharge. Outcomes after the procedure were also documented. **Results:** Seven patients underwent the procedure (6 male, 1 female), with a mean age of 40.714 ± 11.4 years. All patients presented with aortic root aneurysm with dissection. One patient underwent aortic valve replacement due to failure of repair. There were 2 morbidities reported, pneumothorax with subsequent thoracostomy and acute kidney injury which was managed medically, 1 patient was readmitted and eventually expired >30 days post-operative due to sepsis and hospital acquired pneumonia. 2DED prior to discharge showed no aortic regurgitation in 2 patients, 2 patients had mild AR, no 2D echocardiogram was done on 3 patients. **Conclusion:** Preliminary results show that valve sparing aortic surgery via aortic root remodeling with external root annuloplasty is a viable alternative to aortic root replacement in our institution. More cases are needed to further validate the success of this procedure in our setting. Another important factor is postoperative care and follow-up in order to document if there is improvement after repair.

PHC.R.052.15

Prognostic Valve of Reverse Redistribution on Stress Thallium-201 Myocardial Gated Single Photons Emission Computed Tomography in Patients who Underwent Percutaneous Coronary Intervention

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Background: Reverse redistribution (RR) is one of the abnormal scan patterns in myocardial

perfusion scintigraphy using TI-201. Its clinical significance is not known, however, it was reported to be commonly found in patients who had myocardial infarction and those who underwent revascularization. The objective of this study is to determine the prognostic value of reverse redistribution on stress Thallium-201 myocardial perfusion scintigraphy (MPS) among patients who underwent percutaneous coronary intervention (PCI). **Methods:** A prospective cohort study of 99 post-PCI patients who underwent MPS using Tl-201 >3 months after revascularization was done. The subjects were classified based on the scan finding of RR. Follow-up at 6-month interval was done to monitor for major adverse cardiac events (MACE). **Results:** Ninety-nine subjects were included in this study, 19 (19%) of which had RR. Mean follow-up period for the event-free patients was 19 ± 8 months. MACE occurred in 30 (30%) of the subjects at a mean interval of 15 ± 8 months from the time of performance of MPS. Simple binary logistic regression was used to determine the association between RR and MACE. RR was not found to be a significant predictor of the occurrence of MACE (p value = 0.217). **Conclusion:** This study showed that that RR on TI-201 MPS is not a significant predictor of future cardiac events among post-PCI patients. Post-hoc findings favored attenuation artifact as a possible cause of RR in this study population. However, a larger sample size and a longer follow-up period is recommended to make a definite conclusion.

PHC.R.053.15

A Comparison Between Dexmedetomidine and Midazolam as Post-Operative Sedative in Pediatric Patients After Cardiac Surgery

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Background: Dexmedetomidine is a highly specific and selective alpha-2-adrenergic agonist that provides sedation, anxiolysis and analgesia. It has been studied in cardiac patients as an adjunctive sedative together with Midazolam. This study would like to compare the effects of the use of Midazolam and Dexmedetomidine as post-operative sedative in patients who underwent cardiac surgery. **Methods:** In a retrospective cohort study, 71 pediatric patients aged 1-18 years old, ungergoing cardiac surgery who have been given post-operative sedation were selected. Demographic data such as age, sex, body weight, height, body surface area, type of congenital defect and intraoperative data, such as surgical procedure done, cardiopulmonary bypass time, aortic cross-clamp time were recorded. Inotropic score, length of sedation, length of mechanical ventilator time, occurrence of reintubation, and need for adjunctive sedative agent were also noted. **Results:** The groups of children were comparable in properties of sex, types of surgical procedure, cardiopulmonary bypass time, and aortic cross-clamp/ischemic time. However, the Dexmedetomidine Group was about six years older than the Midazolam Group (10.7 ± 3.9 vs. 4.9 ± 3.7 years), and thus, their mean weight, height, and BSA were also significantly greater. Though there was an absolute difference in proportions of usage of adjunctive sedative between the two groups (Dexmedetomidine Group 35.3% vs. Midazolam Group 35.2%), the evidence was insufficient to prove a significant difference (p =.993). In both groups of patients, the preferred supplemental analgesic was Propofol. Likewise, our data was not able to support significant inter group differences in lengths of sedation, duration on mechanical ventilation, post-operative inotropic scores, and rates of reintubation. **Conclusion:** Midazolam and Dexmedetomidine have been suggested as post-operative sedative agent. However, this study does not show any significant difference among the two agents. More studies are recommended to show the difference among the two agents.

PHC.R.055.15

The Accuracy of Central Venous Oxygenation ($SCVO_2$) in Predicting Outcomes in Acyanotic Pediatric Patients Undergoing Cardiac Surgery

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Background: Mixed venous oxygen monitoring (SVO_2) has a well-defined role for guiding hemodynamic management in adults and children undergoing major surgical operations. Central venous oxygen saturation measurement ($SCVO_2$) can be a surrogate for mixed venous oxygen saturation measurement (SVO_2). This study aims to determine the accuracy of central venous oxygenation ($SCVO_2$) in predicting outcomes in acyanotic pediatric patients undergoing cardiac surgery. **Methods:** In a prospective cohort study, 61 acyanotic pediatric patients age 1 month to 18 years old, undergoing cardiac surgery with cardiopulmonary bypass were selected. A pre-bypass central venous oxygen saturation measurement was obtained through the CVP line. At the surgical ICU, patients were observed for the following outcomes: mechanical ventilation time, re-intubation, use of more than 2 inotropes, use of PRBC at >15ml/kg, ICU stay, neurologic complications, acute renal failure, pulmonary complications, occurrence of sepsis, and hospital mortality. **Results:** There were no statistical differences positive and negative outcome when patients are grouped according to sex ($p = 0.86$), lesion ($p = 0.31$), size of lesion ($p = 0.31$), PA pressure ($p = 0.09$), $SCVO_2$ ($p = 0.87$), bypass time ($p = 0.20$), and ischemic time ($p = 0.38$). Age ($p = 0.020$) and weight ($p = 0.020$) are significant with p value below 0.05. The identified cut-off value for determining outcomes in pediatric cardiac surgeries is below or equal to 70.7% (41.18% sensitivity, 81.82% specificity). **Conclusion:** Measurements of central venous oxygen saturation provide an index of tissue oxygenation. Although $SCVO_2$ more than 70.7% do not rule out tissue hypoxia, values 70.7% and below may represent a reliable warning sign for a positive outcome.

PHC.R.059.16

In-Hospital Mortality Rate of Post-CABG Patients from 2011 to 2015 in the Philippine Heart Center

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The Philippine Heart Center is the premier cardiac institution in the country. The international mortality rate from CABG has seen a steady decline from the 1970's to the 1990's due to advancement in the field. Currently, according to the Society of Thoracic Surgeons database, the overall operative mortality rate for CABG is about 3%. It is the objective of this study to determine the in-hospital crude mortality rate for adult patients who underwent CABG from 2011 to 2015. This is a retrospective-descriptive study covering 2011-2015 including all in-hospital mortalities of patients 19 years old and older who underwent CABG. There were a total of 3,450 CABG surgeries done from 2011 to 2015 with 117 mortalities. The in-hospital mortality rate of the Philippine Heart Center for the last 5 years being 3.39% is more than the international mortality rate of 3% but it is important to take note that from 2013 to 2015, the mortality rate is pegged at 3%. Being a high-volume, specialized government center in the age of evidence-based medicine, it would be prudent to explore the idea of creating a database that would be looked into by an expert panel to further improve protocols and outcomes.

PHC.R.061.16

The Use of Modified Del Nido Cardioplegia Solution in Coronary Artery Bypass Grafting Surgery in the Philippine Heart Center

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Background: Cardioplegia is an integral and essential method of myocardial protection for patients of all ages requiring cardiac surgery in which the heart must be stopped. Upon the advent of cardiac surgery these cardioplegia

solutions had an important role in myocardial quiescence and protection. Thus the outcome of the CABG patients given the del Nido Cardioplegia was determined. **Methods:** A total of 22 patients which underwent coronary artery bypass grafting using the del Nido Cardioplegia solution were included in the study. We reviewed the different variables such as the pre-operative data which comprised the age, gender, creatinine, LVEF (Simpson's), co-morbid condition, functional class (NYHA). Intraoperatively, the pre-operative, on-bypass, and post-bypass levels of the potassium, calcium and hematocrit were recorded, as well as the need for defibrillation. **Results:** Twenty-two patients were included in the study, among which 19 were male which counts the majority and 3 were female. Majority were hypertensive at 86.4 %, followed by diabetes mellitus at 40.9%, stroke and COPD accounting for 4.6% each. The potassium and calcium levels preoperatively, on-bypass, and post bypass were within normal levels. The hemoconcentration was noted to be low during bypass and post-bypass with a mean hematocrit of 0.26 and 0.29 respectively and defibrillation was done among 2 patients. **Conclusion:** There have been 22 patients included in the study, ages ranges from 42 to 67 years old which. Only a few patients required defibrillation. The electrolytes were maintained at a normal level which is important and reflective of myocardial preservation. All patients regardless of NYHA condition and co-morbidities were all discharged.

PHC.R.010.17

Utility of Thoracoscore in Predicting the risk of death and Prolonged Mechanical Ventilation among Patients Undergoing Cardiotho racic Surgeries.

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Background: The use of risk stratification systems had helped clinicians predict outcomes based on clinical parameters and characteristics of patients and these usually guide them in their management thus lowering the risk of mortality and morbidity in some patients. The Thoracoscore is a risk stratification that can be used in all cardiothoracic surgeries as a tool for predicting the risk of death. The Thoracoscore (Falcoz et al, 2007) uses nine variables to predict patient surgical mortality and has been tested and validated in several large studies. **Methods:** A prospective cross-sectional study was conducted among 149 patients undergoing cardiothoracic surgeries. A Thoracoscore risk stratification was done pre-operatively and patients were followed-up post-operatively for prolonged mechanical ventilation and death. **Results:** Ninety-two patients (92%) were males and fifty seven (57%) were females. The mean age of the study population was 52 years old. Majority of the patients underwent coronary artery bypass graft (57%). Most of the patients have diabetes mellitus (52%), hypertension (70%), coronary artery disease (59%) and non-smokers (63%). Patient stratified as low risk had good outcomes after cardiothoracic surgery. Moreover, those patients stratified as moderate were likely to be discharged while patients stratified as high risk and very high risk required prolonged mechanical ventilation and presented with higher risk of mortality. **Conclusion:** Thoracoscore risk stratification is a simple, non-invasive and feasible test that may be used for pre-operative evaluation. A low risk is more likely to result to good outcome while a very high risk resulted to a 100% risk of mortality of patient who underwent cardiothoracic surgeries. Moreover, those stratified as moderate and high risk is more likely to have prolonged intubation.

PHC.R.011.17

Airflow Obstuction in Bronchiectasis: The Association between the types of Bronchiectasis and Pulmonary Function Tests

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Background: Bronchiectasis can have important hemodynamic consequences because of proliferation of the bronchial circulation in its vicinity. Airflow obstruction is the functional hallmark anatomical site of obstruction would provide pathologic insights and might allow greater therapeutic precision, as well as impro-

ving the accuracy with which the effects of intervention are monitored of bronchiectasis. The aim of the present study is to assess the impact of the different types of bronchiectasis on clinical features and pulmonary function tests. The study also aimed determine the correlation between pulmonary function and HRCT score among patients with bronchiectasis. **Methods:** All Bronchiectatic patients with HRCT scans referred for pulmonary function test (PFT) at Philippine Heart Center Pulmonary Laboratory and those in an outpatient diagnosed with Bronchiectasis and with PFT who met the selection criteria were included in the study. This is a 5-year review of records, PFT's and images from March 2013 to July 2018. Comparisons of the anthropometry, clinical data, high-resolution CT, and pulmonary function tests according to the different types of bronchiectasis were examined using the analysis of variance (ANOVA). Pearson correlation coefficient was calculated to investigate the association between pulmonary function and HRCT score. Statistical significance was established as $p < 0.05$. **Results:** Of the 81 patients included in the study, 42 patients (52%) were men and 39 patients (48%) were women. There is a statistically significant difference between the three groups in relation to the mean values of FVC%, FEV1% ($p < 0.0001$), FEVI/FVC% (0.03). Mean values were more significantly reduced in saccular (cystic) bronchiectasis group. Global HRCT scores for all patients with bronchiectasis has a strong statistically significant, negatively correlated with the values of FEV1% ($p < 0.001$). **Conclusion:** In conclusion, cystic bronchiectasis is associated with more severe lung function impairment and worse HRCT scores as compared with cylindrical and varicose type bronchiectasis. HRCT scores correlate with FEV1% and could be a predictor of airflow obstruction. The vicious cycle of chronic infection and damage to the airways leads to increasingly severe symptoms, physiological impairment manifesting as ventilatory defects and abnormalities in gas exchange.

PHC.R.028.17

Utility of Tidal Breathing Analysis Among Children with Suspected Asthma

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Background: The evaluation of asthma among the pediatric population is often challenging. Tidal breathing analysis has been available for decades in both clinical and research settings as means to indirectly measure the airway mechanics. This study aims to determine the lung function of children less than 6 years old suspected with asthma using tidal breathing analysis. **Methods:** This is a cross-sectional analytical study. A total of 35 subjects were classified as to viral-induced wheeze, doubtful asthma and probable asthma based on the questionnaire adopted from the 2017 GINA guidelines. TPTEF/TE was measured using Jaeger Masterscreen Baby Body Paediatrics System. **Results and Discussion:** The results of this study showed that there was a difference in TPTEF/TE of children less than 6 years old based on asthma-like symptoms. A significant difference was noted when the tidal breathing analysis of children with doubtful asthma was compared to either the children with viral induced wheeze or children with probable asthma. However, no significant difference was noted in the tidal breathing analysis of children with viral induced wheeze and with probable asthma. **Conclusion:** A TPTEF/TE of 29.68 ± 11.89 can be used as a reference value for patients suspected with asthma. These reference data can be used as a valuable tool in the clinical application of tidal breathing analysis for diagnosing asthma among the pediatric population. However, it does not delineate the TBA values expected for normal subjects, which is the major limitation of this study.

PHC.R.030.17

Utility of TBA in Assessing Reversibility to Bronchodilator in Children <6 Years Old Diagnosed To Have Doubtful Asthma and Probable Asthma

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Background: Asthma is a multifactorial disease usually characterized by chronic airway inflammation. Lung function test is more difficult to measure in children less than 6 years old due to lack of cooperation. Tidal breathing analysis is a non-invasive method of measuring airway and parenchymal lung function. **Methods:** This is a cross-sectional study. A total of 72 subjects were classified as to doubtful and probable asthma based on the questionnaire adopted from 2017 GINA guidelines. The TPEF/TE and VPEF/TE were measured using Jaeger Masterscreen Baby Body Pediatric System and all subjects where exposed to bronchodilator salbutamol to deteremined reversibility and response. **Results:** In this study, the tidal breathing analysis parameters TPTEF/TE and VPEF/TE were consistent with other studies and is statistically significant to delineate children with doubtful and probable asthma. In this study there was no significant difference in the absolute and percent change between doubtful and probable asthma. In the present study, a 12% change in the TPTEF/TE and VPEF/TE was used to indicate a positive response to bronchodilator (salbutamol). There is no significant correlation between responders and non-responders in TPTEF and VPEF group to the characteristic of children on doubtful and probable asthma. Clinical improvement after bronchodilator nebulization may not be absolutely 12% change in TPEF/TE and VPEF/TE. **Conclusions:** This study showed that TBA (TPTEF/TE and VPEF/TE) pre-bronchodilator values of 25.91 ± 8.61 and 28.88 ± 6.75 can be used to delineate children with doubtful and probable asthma. The utility of TBA as a tool to determine the reversibility to bronchodilator is statistically not significant and the study still cannot objectively give value as to the percent change of response to bronchodilator.

PHC.R.056.17

Accuracy of Fractional Exhaled Nitric Oxide (FeNO) Value in Predicting Post-Operative Airway Reactivity among Children with Congenital Cardiac Anomaly

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Background: Fractional exhaled Nitric Oxide (FeNO) has been used to diagnose and monitor asthma. It is a non-invasive marker of airway inflammation. Infections of the airways of the airways have been established to complicate post-operative complications. Children with upper respiratory tract infections had a significantly higher incidence of pulmonary complications. We hypothesize that FeNO levels predict post-operative airway reactivity among children with congenital cardiac anomaly. **Methods:** All patients with CHD ages 6-18 years old referred to pediatric pulmonology for preoperative risk stratification were included in the study. The presence and onset of upper respiratory infection was noted. FeNO determination was done and patients were grouped to low flow and high flow congenital cardiac disease. Wheezing postoperatively was observed. Accuracy of FeNO was determined. **Results:** Nineteen patients completed the study. There were more patients in the high flow group, mostly ventricular septal defect 52.63%. Twenty-one percent had upper respiratory tract infection, of which, 75% experienced post-operative airway reactivity. The overall accuracy of FeNO in predicting postoperative airway reactivity is 78.95% with sensitivity and specificity of 75% and 80% respectively. **Conclusion:** FeNO is accurate in detecting postoperative airway reactivity in children with high flow congenital heart lesions particularly those who had upper respiratory infection.

PHC.R.057.17

Association of the Compliance of Health Care Providers at the Philippine Heart Center to the Class I ACC/AHA Guidelines on the Diagnosis and Management of Patients with Acute Coronary Syndromes with In-Hospital All-Cause Mortality

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Background: International cardiology associations have provided recommendations for acute care in the management of ACS. These recommendations should result in a reduction in mortality. This study was initiated to review the institution's compliance to recommendations as an assessment of its health care providers' care of ACS patients. **Methods:** Hospital records of 300 patients with a diagnosis of Acute Coronary Syndrome, ST Elevation Myocardial Infarction, Non-ST Elevation Myocardial Infarction or Unstable Angina admitted between January 2015 to December 2016 were reviewed. A compliance index was determined using the ratio of the number of actual treatments administered to the subject to the number of theoretical treatments applicable to said subject. In-hospital mortality rates were then determined. **Results:** Of the 123 STEMI subjects, 8 (6.5%) subjects had compliance indices <70% while 115 (93.5%) had compliance indices >70%. Of the 177 NSTEMI subjects, 21 (11.9%) had compliance indices <70% while 156 (88.1%) had compliance indices >70%. Compliance index was >70% for the over-all population at 85.9, 88.1% for the STEMI group and 84.4% for the NSTEMI group. **Conclusion:** There was an association between the over-all compliance of health care providers to the ACC/AHA guidelines on the management of ACS patients CV mortality. A high over-all compliance index is a positive indicator regarding the compliance of the institutions' physicians with guideline recommendations for ACS management. Moreover, due to the findings in this study which are consistent with findings from studies abroad, the importance of adherence to guideline-recommended management was emphasized.