The Incidence of Post-Operative Cognitive Dysfunction Among Patients Who Underwent Cardiovascular Surgery Under Cardiopulmonary Bypass: a Preliminary Report

Yvette T. Go., MD

Background ---The transient mental dysfunction post surgery has an important impact on the patient's health and therefore on health care costs. This condition can result in increased morbidity, delayed functional recovery, and prolonged hospital stay, thus, early diagnosis and prompt treatment is imperative. Since anesthesiologists have an important role in the perioperative management of elderly patients undergoing surgery, it is imperative for them to have a good understanding of postoperative delirium. There has been no definitive analysis of postoperative delirium in the elderly with emphasis on anesthesia care; therefore we shall undertake this study to present such an analysis.

Methods --- This is a prospective cohort study involving adults scheduled for elective cardiovascular surgery under cardiopulmonary bypass. Excluded were: patients with neurologic deficit of any etiology; physical disability preventing neuropyschometric tools; Mini mental state exam (MMSE) less than 24/30; preoperative atrial fibrillation; daily use of tranquilizers and anti-depressants; alcohol abuse; and inability to understand the language used. MMSE will be tested the day prior to surgery, after the patient undergoes surgery and prior to discharge from hospital or one week after surgery. A score of less than 24/30 points is suggestive of post-operative cognitive dysfunction.

Results --- Sixteen patients were enrolled in the study. Most of the patients are between 18-40 years old (43.7%), male (68.8%) and finished a secondary level of education. Most patients were classified under ASA III (75%) who underwent mostly valvular procedures (43%) and CABG (31%). Intraoperative parameters noted are the following: lowest temperature maintained during cardiopulmonary bypass surgery, the cardiopulmonary bypass time and ischemic time and the hematocrit bypass surgery, the cardiopulmonary bypass time and ischemic time and the hematocrit level while on cardiopulmonary bypass. The mean temperature was 29C, with an average of 143 minutes of cardiopulmonary bypass and an ischemic time of 92 minutes. The lowest hematocrit level while on cardiopulmonary bypass had a mean of 0.21. There was no significant difference between the MMSE-1 results from the MMSE-2 results obtained.

Conclusion --- In conclusion, there was no incidence of post-operative cognitive dysfunction among Filipino patients who underwent major cardiovascular surgery under cardiopulmonary bypass using the Mini-Mental State Exam. Age, ASA classification, CPB and ischemic time and temperature were not contributory factors in the incidence of POCD. ***Phil Heart Center J 2012;16:88-9.***