Nitroglycerin Test and Troponin T in Predicting Undiagnosed Patients with Coronary Artery Disease

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Background --- Chest pain is one of the cardinal manifestations that bring a patient to the emergency room or to a cardiologist's clinic. However, such pain may originate not only in the heart but also from a variety of non-cardiac causes. Evaluation of a patient with chest pain in the emergency room is time consuming and expensive and can often result in an unclear diagnosis. This study was undertaken to assess the value of a simple bedside test, the NTG test, in the evaluation of patients who presents in the emergency room for initial episodes of chest pain.

Methods --- This is a prospective cross sectional study that includes all patients who would come in at the ER for the first time presenting with chest pain described as heaviness or squeezing, for more than six hours. Excluded are those who are previously diagnosed to have coronary artery disease or who have prior intake of nitroglycerin or sildenafil. Clinical data from the ER, ECG, result of Troponin T and lipid profile was noted. The initial step involved identifying patients with headache and patients with non headache after being given nitroglycerin 400mcg, sublingual. If the patient complained of headache, this was labeled as negative nitroglycerin test. Blood sample for Troponin T were extracted. Patients with positive or negative nitroglycerin test was then referred for coronary angiogram to determine the severity of the coronary artery disease.

Results --- The study was able to include thirty-five patients for the analysis. The mean age is 49 and majority was males. There were 18 who were positive for the NTG test while the rest were negative. The prevalence of headache was 51%. There were 25 hypertensive patients, 13 smokers, 6 with family history of coronary artery disease, 30 with abnormal ECG readings, 11 with high total cholesterol, 10 with high LDL levels, and 12 patients with low HDL levels. Troponin T was positive in 2 subjects. Sixteen patients showed insignificant/significant coronary artery disease.

Conclusion --- Nitroglycerin test is a simple bedside procedure but a reliable predictor of coronary artery disease. The validity measures of NTG test, with coronary angiography as the gold standard in determining coronary artery disease, showed a sensitivity of 100% and a specificity of 89.5% with a positive predictive value of 88.9% and a negative predictive value of 100%, p=0.000. ***Phil Heart Center J 2012;16:80-1.***