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Featured Articles:

A PRELIMINARY STUDY ON PREOPERATIVE EXERCISE TESTING IN THE EVALUATING OF PATIENTS UNDERGOING THORACIC AND CARDIOVASCULAR SURGERY

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To evaluate three types of exercise testing in prediction of postoperative morbidity or mortality after thoracic or cardiovascular surgery, 10 patients underwent evaluation prior to operation. Nine patients (Group 1) developed mild complications compared to Group 2 whose postoperative course was unremarkable. No mortality was recorded. Preoperative exercise testing showed that Group 2 had a longer six-minute walk distance and a higher stair climb Group 1. Likewise, the mean maximal oxygen uptake (VO_2 max) obtained on stair climb and incremental symptom limited exercise test were also higher in Group 2. Utilization of VO_2 max as a criterion for operability is a promising mode of preoperative evaluation. Phil. Journal Chest Diseases. Vol. 10 No. 1 pp: 1-8.

PRE- AND PERI- OPERATIVE RISK FACTORS PREDICTING POST OPERATIVE RESPIRATORY OUTCOMES IN POST CORONARY ARTERY BY-PASS PATIENTS

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OBJECTIVES: To evaluate the predictive values of a set of commonly used pre-operative clinical and cardiopulmonary parameters by combining individual pre-operative parameters to identify specific patients destined for postoperative pulmonary complications. To evaluate pre-operative parameters that may be a factor in predicting postoperative pulmonary complications.

METHODOLOGY: Patients undergoing CABG from March 1998 to September 1998 were considered in the study. Clinical pulmonary outcomes were assessed and patients were assigned to four different gradings. Summary descriptive statistics were computed for all variables using the SSPS software package. Variables include age, sex, weight, category, smoking history, clinical signs of congestive heart failure, angina, history of MI, diabetes, FVC % predicted, FEV1 % predicted, $PaCO_2$, PaO_2, P/F ration, LVEF, LVEDV, number of grafts, anesthesia time, and urgency of procedure. Statistical analysis included the mean, standard deviation, measures of association, and correlation, and linear regression analysis.

RESULTS: Following variables were noted to be significant ($p < 0.10$): smokers, history of MI, diabetes, FVC, $PaCO_2$, PaO, LVEF, anesthesia time and urgency of procedure. Linear regression analysis showed that patients with 7-8 pack years smoking history has a grade 1 predicted outcome, and patients with 62 pack years have a grade IV predicted outcome. FVC within 69-78% predicted has a predicted outcome of grade II or IV. $PaCO_2$ between 32-37 mmHg has a predicted outcome of grade III or IV. PaO_2 levels that fall within 69-80 mHg have a predicted outcome of grade III or IV. Ejection Fraction of 49-59 have a predicted outcome of grade III or IV. Anesthesia time of 5.33 – 6.43 hrs have a predicted outcome of grade IV.

CONCLUSIONS: Four major factors were noted to play a role in predicting postoperative outcome. First, is preoperative history of the patient, followed by cardiac status prior to CABG; third, pulmonary status particularly PaO_2 and $PaCO_2$; and last, the anesthesia time of the procedures. Phil. Journal Chest Diseases. Vol. 10 No. 1 pp: 9-12.

PREOPERATIVE EVALUATION OF RESPIRATORY FUNCTION IN CHILDREN AND ADOLESCENTS WITH ATRIAL SEPTAL DEFECT AND VENTRICULAR SEPTAL DEFECT: A PRELIMINARY REPORT

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OBJECTIVE: To determine the risk factors for postoperative pulmonary complication in patients with atrial septal defect and ventricular septal defect.

STUDY DESIGN: Prospective cross-sectional.

METHODS: Thirty Two (32) patients, 6-19 years of age undergoing open-heart surgery for ventricular septal defect and atrial septal defect and can perform pulmonary function test were included in the study. Variables were determined that would correlate with postoperative pulmonary complication and includes age, sex, nutritional status, passive smoking, history of upper and lower respiratory tract infections, co-function, preoperative endoctracheal intubation, preoperative PO_2, PCO_2, hemoglobin, chest x-ray, preoperative pulmonary hypertension, Qp:Qs ratio, ASA physical status, bypass time, total x-clamp time number of hours extubated post-operatively and pulmonary function test parameters.

RESULTS: The significant risk factors related to development of pulmonary complications post-operatively are: age > 10 years old ($p = 0.006$), increased pulmonary to systemic flow (Qp: Qs) > 1.5:1 ($p = 0.039$), low forced vital capacity (FVC) mean 69.42 ± 15.69 ($p = 0.001$), low forced expiratory volume in 1 second (FEV_1) mean 62.23 ± 17.62 ($p = 0.001$) and low FVC + FEV_1 / FVC mean 151.57 ± 20.22 ($p = 0.002$).

CONCLUSIONS: Patients with atrial septal defect and ventricular septal defect have some impairment of lung function because of the increased pulmonary blood flow and pulmonary hypertension. Preoperative evaluation of respiratory function is important to identify by screening pulmonary function studies and institution of prophylactic measures in such patients reduces the incidence of postoperative pulmonary complications. Phil. Journal Chest Diseases. Vol. 10 No. 1 pp: 13-18.

VALIDATION OF THE PRE-OPERATIVE ASSESSMENT OF PULMONARY COMPLICATIONS IN POST-OPERATIVE CARDIAC PATIENTS

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STUDY OBJECTIVE: To validate the Shapiro's Criteria in identifying preoperative risk of developing postoperative pulmonary complications among patients who underwent cardiac surgery and to stratify this complications according to the type of cardiac surgery done.

MEASUREMENT: Patients stratified according to Shapiro's Risk Stratification.

CONCLUSION: Shapiro's criteria may be useful in detecting postoperative pulmonary complication, however, the small number of subjects limits this study. Phil. Journal Chest Diseases. Vol. 10 No. 1 pp: 19-22.

SINGLE BREATH DIFFUSING CAPACITY OF HEALTHY, NONSMOKING ADULTS IN A UNIVERSITY HOSPITAL

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OBJECTIVE: To determine if there is a difference between the measure DL_{CO} of healthy, nonsmoking adults seen at the UST Hospital and the normal DL_{CO} based on the foreign predictive equation by Crapo.

DESIGN: Cross-sectional study.

SETTING: Private university hospital in Metro Manila.

PARTICIPANTS: Healthy, nonsmoking adults age 18 years or older seen at the UST Hospital from June 1998 – September 2001.

METHODOLOGY: Each subject underwent complete history, physical examination and screened with a modified self-questionnaire on lung symptomatology as recommended by Fishman. Eligible subjects performed DL_{CO} using the Automated Body Plethysmograph according to the standards set by the American Thoracic Society (ATS).

OUTCOME MEASURES: Mean, standard deviation, mean difference, and p value using the Wilcoxon paired test.

RESULTS: A total of 140 subjects were screened but only 87 subjects met the criteria and were included in the study. Majority (72.4%) of the subjects females. The mean age for male and female are 33.96 ± 15.24 and 37.3 ± 13.38 years, respectively. The mean value for the actual DL_{CO} is 30.25 ± 7.3 and 22.96 ± 4.87 ml/min/mmHg for male and female, respectively. The predicted DL_{CO} using the foreign equation (Crapo) is 34.86 ± 5.52 and 26.04 ± 2.85 ml/min/mmHg for male and female, respectively. The p value for male (0.0036) and female (0.000019) are both very significant.

CONCLUSION: Based on the above results, we found that the predictive values from the foreign equation were significantly differently from the actual measured values of healthy, nonsmoking adults seen at the UST Hospital. Therefore, there is a need to develop an equation that would best approximate the population being tested.
Phil. Journal Chest Diseases. Vol. 10 No. 1 pp: 23-26.