CLINICO-DEMOGRAPHIC FACTORS AFFECTING LUNG FUNCTION OF SCHOOL-AGED CHILDREN (7 TO 12 YEARS OLD) LIVING IN AN IN-LAND BARANGAY IN DAVAO CITY

Micah Kim D. Cabatu, Davao Doctors Hospital, Davao City, Philippines.

Background: Respiratory Tract Infection (RTI) is one of the most common pediatric concerns. There is paucity of studies in measuring the lung function of children locally.

Objectives: Correlate the lung function test and clinico-demographic profile of school-aged children

Design: Prospective cross-sectional design

Setting: Two-month study conducted in an in-land barangay in Davao City

Participants: Nineteen school-aged children currently enrolled in Communal Elementary School

Main Outcome Measures: Pearson moment product correlation was used to analyze the relationship between age, weight and height and lung function. Independent sample t-test statistic was used in analyzing the relationship between sex, family history of atopy and autoimmune diseases and exposure to Pulmonary Tuberculosis (PTB). Spearman rank correlation was used in analyzing the relationship between family income class, frequency of RTI, duration of symptoms, antibiotic use and Out Patient Department (OPD) consults.

Results: Majority of the subjects were females with mean age of 9.4 (±1.8) years old, mean weight of 29.8 (±7.2) kg and mean height of 139.5 (±11.4) cm. More than half of them belonged to the family income class of < ₱10,000.00 monthly. Most of them had 1 to 5 episodes of RTI in the past year, experienced shorter duration of symptoms lasting for 1 to 3 days and had OPD consults. Eighty-four percent of the participants denied use of antibiotics. Majority denied family history of atopy and 1 had family history of autoimmune diseases. Eighty-four percent of the subjects denied exposure to patients with PTB. Age showed statistically significant positive relationship with Forced Vital Capacity (FVC) (p=0.020), Forced Expiratory Volume in 1 second (FEV1) (p=0.000) and FEV1/FVC ratio (p=0.022). Weight showed statistically significant positive relationship with FVC (p=0.042) and FEV1 (p=0.006). Height showed statistically significant positive relationship with FEV1 (p=0.036) and FEV1/FVC ratio (p=0.003). Frequency of RTI in the past 1 year was negatively correlated with FVC (p=0.028). Duration of symptoms per episode showed negative relationship with FEV1 (p=0.010). OPD consult was negatively correlated with FVC (p=0.039) and FEV1 (p=0.002).

Conclusions: Higher lung function values in older children. Higher FVC and FEV1 values in heavier children. Higher FEV1 and FEV1/FVC values in taller children. Children with frequent RTI had isolated lower FVC values which may suggest possible restrictive lung function. Isolated lower FEV1 values in children with longer duration of illness may suggest possible obstructive or restrictive lung function. More frequent OPD consults may mean more severe illness with decreased values of FVC and FEV1. Further studies with more variables and larger sample size is highly suggested.

Keywords: *spirometry, lung function test, school-aged children*