OP 12: The correlation between pulmonary function and quadriceps muscle strength of patients suffering from chronic obstructive pulmonary disease (COPD) presented to two major respiratory clinics in Sri Lanka.

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Introduction: A patient with COPD usually indicates a decreased value in Forced Expiratory Volume (FEV1) and Forced Vital Capacity (FVC). For the diagnosis purpose and to identify the severity stage of patients with COPD, a clear cut off points of spirometry values are used. Skeletal muscle dysfunction is one of the main extra-pulmonary manifestations found in patients with COPD. Reduced muscle strength in lower limb muscles, specially quadriceps muscle group would affect the quality of life of the patient.

Objectives: To evaluate the correlation among the pulmonary function and quadriceps muscle strength of Patients with COPD.

Methods: This descriptive cross-sectional study was conducted with 35 COPD patients (27 Male, 08 Female) between age category of 40-60 years recruited from chest clinics. Convenient sampling method was used to collect the sample for the study. The spirometry test results were used to measure the lung function while the One Repetition Strength Test (1RM) was conducted to measure bilateral quadriceps strength.

Results: The test results indicated a statistically significant positive moderate linear correlation ($p=0.004$, $r=0.469$) between respiratory function, and right 1RM and left 1RM ($p=0.006$, $r=0.451$).

Conclusions: The results of this COPD population clearly show that with the increase in severity of the disease from moderate, severe to very severe stage of COPD, there is a profound weakness of the bilateral quadriceps muscle strength in COPD patients.

Keywords: Pulmonary Function, One Repetition Maximum, Quadriceps Strength