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**Body mass Index, Markers of airway inflammation, and carboxy hemoglobin levels of Chronic Obstructive Pulmonary Disease patients, attending to a chest clinic at Colombo South Teaching Hospital in Sri Lanka**

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**Background:** Chronic Obstructive Pulmonary disease (COPD) is a chronic progressive disease with airway inflammation and frequent exacerbations. The main etiological factor for COPD amongst Sri Lankan males is smoking. Smoking elevates breath CO levels and airway inflammation elevates fraction of exhale nitric oxide (FeNO). However, the level of inflammation of airways and breath carboxy hemoglobin (bCO) levels of Sri Lankan COPD patients are unknown.

**Objectives:** To determine the symptom severity, airway inflammation and levels of bCO among a sample of COPD patients attending a chest clinic in a selected teaching hospital.

**Method:** A descriptive cross sectional study was conducted on 145 patients diagnosed with COPD. Through consecutive sampling baseline data, and symptoms severity were obtained by MRC Dyspnea scale and an interviewer administered questionnaire. Airway inflammation was determined by

breath FeNO (Bedford Inc. UK) and exhaled breath CO (Bedford Inc. UK).

**Results:** 63.1% were males; low BMI was observed in 35.1% that which indicates poor nutritional status. Mean BMI of the subjects was 20.64 kg/m<sup>2</sup>. 53.1% were ex-smokers. Airway inflammation as determined by FeNO level was associated with smoking status ( $p < 0.05$ ). 51% had intermediate FeNO levels (25 – 50 ppb). Patients had high FeNO levels (more than 25 ppb) was taken as airway inflammation. Ninety three percent had low COHb levels ( $< 5$  ppm), 6.1 % had intermediately high COHb levels ( $> 5$  ppm). The mean exhaled CO level was significantly higher in smokers when compared to non-smokers ( $< 0.001$ ). Majority (64.6%) had severe dyspnea level (MRC of grade 4-5) that indicates majority had breathlessness according to the MRC dyspnea scale.

**Conclusion:** The present study confirms that measurements of FeNO levels can detect airway inflammation and bCO levels can determine smoking status of COPD patients. Poor nutritional status of COPD patients to be addressed by proper dietary advice and supplementation