

# European Respiratory Society Annual Congress 2012

**Abstract Number:** 3766

**Publication Number:** P1054

**Abstract Group:** 6.3. Tobacco, Smoking Control and Health Education

**Keyword 1:** Smoking **Keyword 2:** Spirometry **Keyword 3:** Biomarkers

**Title:** Increased levels of exhaled carbon monoxide and their correlation with airflow obstruction in asthma and COPD

Dr. Mohammad 23304 Shameem drshameem123@gmail.com MD <sup>1</sup>, Prof. Qayyum 23305 Hussain hussain2@rediffmail.com <sup>2</sup> and Mr. Asrar 23306 Ahmad asraramd@rediffmail.com <sup>1</sup>. <sup>1</sup> Tuberculosis and Chest Diseases, JN Medical College; AMU, Aligarh, UP, India, 202002 and <sup>2</sup> Department of Biochemistry, Faculty of Life Sciences; AMU, Aligarh, UP, India, 202002 .

**Body:** Purpose: Quantify lung oxidative stress in patients with asthma and chronic obstructive pulmonary disease by measuring levels of exhaled carbon monoxide and carboxyhaemoglobin. Method: Levels of exhaled carbon monoxide and carboxyhaemoglobin were evaluated in 30 patients with COPD, 30 asthmatic patients and 30 healthy volunteers respectively. Exhaled CO and %COHb was measured on a portable piCO<sup>+</sup> smokerlyzer, using the method described by Jarvis et al. Exhaled CO level measured by the analyzer is reported to correlate closely with blood COHb concentration. Results: Mean exhaled CO level was significantly higher among COPD ( $8.17 \pm 0.66$  ppm), asthmatic patients ( $7.73 \pm 0.67$  ppm) as compared to controls ( $5.37 \pm 0.56$  ppm,  $p < 0.01$ ;  $p < 0.05$  respectively). No significant difference in the levels of CO concentration between asthma and COPD ( $p > 0.05$ ). %COHb levels were remarkably higher in COPD and asthma patients as compared to control group. The values being  $1.94 \pm 0.11$ ,  $1.91 \pm 0.11$  and  $1.48 \pm 0.09$  respectively (COPD vs control,  $p < 0.01$ ; asthma vs control,  $p < 0.05$ ). Conclusion: Levels of CO and %COHb in exhaled air have role in lung oxidative stress. These biomarker measurement in exhaled air is a simple, non-invasive and sensitive approach to monitor airway inflammation and assess the response to treatment.