

European Respiratory Society Annual Congress 2013

Abstract Number: 4432

Publication Number: P1545

Abstract Group: 1.1. Clinical Problems

Keyword 1: COPD - management **Keyword 2:** Quality of life **Keyword 3:** Rehabilitation

Title: The effect of folic acid supplementation on hyperhomocysteinemia and pulmonary function parameters in chronic obstructive pulmonary disease

Prof. Mradul 28642 Daga drmraduldaga@gmail.com MD ¹, Mr. Naushad 28643 Khan naushadkhan82@gmail.com ² and Dr. Harish 28644 Saini arish.saini22@gmail.com ¹. ¹ Medicine, Maulana Azad Medical College, New Delhi, Delhi, India, 110002 and ² Biotechnology, Jamia Millia Islamia, New Delhi, Delhi, India, 110025 .

Body: Background and Aims: Preliminary studies have established the elevated plasma total homocysteine (tHcy) levels as a risk factor for chronic obstructive Pulmonary Disease (COPD). However, studies describing plasma tHcy levels and their relationship to folic acid Supplementation and FEV1 status in COPD Patients are still lacking. Hence, we investigated the role of hyperhomocysteinemia in COPD, and then prospectively examined the relationship between plasma tHcy concentration and effect of folic acid supplementation on FEV1 Status in COPD Patients. Methods: The Study included 50 out patients with stable COPD and 30 healthy controls. Plasma levels of homocysteine were measured by ELISA method. All the subjects were given folic acid therapy (5mg daily) for 6 weeks duration and were followed up. Repeat plasma homocysteine and FEV1 were measured after 6 weeks. Results: COPD patients had higher baseline plasma tHcy concentration than controls (Mean: $27.4 \pm 23.85 \mu\text{mol/L}$, versus $15.8 \pm 6.67 \mu\text{mol/L}$, $p=0.011$) and COPD was associated with higher tHcy concentrations also after adjusting for smoking, and age. The mean BMI of the patients was 21.3 ± 3.26 . The mean homocysteine values decreased from 28.8 ± 25.45 to $15.2 \pm 15.69 \mu\text{mol/L}$, (p value = 0.001) after six weeks of folic acid supplementation. However, no significant change was observed in FEV1 upon folic acid supplementation. (FEV1 = 1.03 ± 0.48 and 1.1 ± 0.51 respectively; P value: 0.103). Conclusions: COPD patients seem to have a poor folic acid status and as a consequence high tHCY. Also, folic acid supplementation has shown decreased plasma tHcy concentrations, but not necessarily significant change in FEV1.