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Title: Association of GSTT1 & M1 gene polymorphism with ageing in Northern Indian COPD and lung cancer patients

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Body: Background: There is increasing evidence for a close relationship between aging and chronic inflammatory diseases. COPD is a chronic inflammatory disease of the lungs, which progresses very slowly and the majority of patients are therefore elderly. In this study, we assess whether age in metabolism of phase 2 enzyme gene polymorphisms GSTT1 & GSTM1 in northern Indian COPD and lung cancer Patients. Material & Methods: In this case only study, we have enrolled 422 study subjects (218 lung cancer & 204 COPD). COPD enrolled after spirometry evaluation and lung cancer patients confirmed by Histopathology. All genotyping were done by PCR-RFLP method. Results: GSTM1 null was found to be significantly higher in COPD patients as compared with healthy controls (OR=2.08; 95%;CI=1.40-3.09; P=0.0001), but there were no significant differences in the distribution of genotypes of polymorphisms of GSTT1 null patients and healthy controls, and in lung cancer GSTT1 null polymorphism was found to significant associated (OR=0.47; 95%; CI=0.30-0.73;P=0.001). But GSTM1 null polymorphism was not significant associated with lung cancer patients. In subgroup analysis in age, we found GSTM1 N/P polymorphism significantly associated between age 50-60 years for COPD (43.5%/21.2%,p=0.015), but in case of Lung cancer none of GSTT1/M1 null polymorphism were associated (p=0.071,p=0.934). Conclusion: We conclude that GSTM1 null polymorphism was associated with COPD. We also observe that GSTM1 null polymorphism was associated between aging group 50 -60 years COPD patients but not in case of Lung cancer. So we can conclude that aging have affect of COPD not in lung cancer patients.