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Title: Pentraxin 3 as a novel biomarker of inflammation in chronic obstructive pulmonary disease

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Body: Background: Chronic obstructive pulmonary disease (COPD) is a complex chronic inflammatory disease of lungs in which inflammatory markers are involved with extrapulmonary effects that may contribute to its severity and complications. Moreover, some of the inflammatory markers such as C-reactive protein (CRP) are associated with COPD. Pentraxin 3 (PTX3) is the member of long pentraxins that resembles CRP (short pentraxin) in structure. The aim of the present study was to investigate the level of PTX3 in COPD patients. Methods: 54 COPD patients and 31 controls were enrolled in this study. Demographical data such as age, sex, cigarette smoking status, comorbidities, drugs, habits and modified Medical Research Council (MMRC) dyspnea scores were recorded. All patients were asked for COPD Assessment Test™ (CAT). Results: The mean age was 65.7 ± 9.8 years, 92% male. Plasma levels of PTX3 were found to be markedly higher in COPD patients [1.65 (0.32-12.72) ng/ml] than in controls [1.05 (0.43-3.26) ng/ml; $p=0.005$]. On the other hand, PTX3 values did not differ between different stages of COPD [stage 1, 1.75 (0.34-11.3); stage 2, (2.14 (0.32-12.7); stage 3, 1.7 (0.86-8.15); and stage 4 2.79 (0.52-6.07), $p=0.89$]. The plasma PTX3 levels were positively correlated with MMRC scores.

Spearman correlation coefficients between age, smoking, spirometric parameters, MMRC, CAT scores and PTX3 levels

	r	p
age	-0.10	0.47
CRP	0.06	0.71
cigarette smoking	0.12	0.43
FEV1	0.01	0.94
COPD stage	0.10	0.49
MMRC scores	0.35	0.018
CAT scores	0.23	0.13

Conclusions: We conclude that PTX3 levels are elevated in COPD patients. Plasma levels of PTX3 were correlated with dyspnea (MMRC scores). PTX3 were not correlated with the severity of COPD.