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Title: Lipoprotein-associated phospholipase A₂ levels as a predictor of cardiovascular risks in patients with COPD and obstructive sleep apnea

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Body: Introduction: Lipoprotein-associated phospholipase A₂ (Lp-PLA₂) is an inflammatory mediator used as a novel marker for diagnosis of cardiovascular diseases and atherosclerosis in human. Both chronic obstructive pulmonary disease (COPD) and obstructive sleep apnea (OSA) are associated with increased activation of inflammatory cells and molecular mechanisms associated with atherosclerosis. Aim: to study the relation between Lp-PLA₂ level and the clinical, polysomnographic and spirometric data in patients with OSA, COPD and overlap syndrome (COPD+OSA). Methods: Sixty patients were recruited, divided into 4 groups (15 in each group) based on their polysomnographic and spirometric data ; group I (normal), group II (OSA), group III (COPD) and group IV (overlap syndrome). Fasting serum samples were used to estimate lipid profile and Lp-PLA₂ concentrations. Results: apnea-hypopnea, arousal, desaturation indices, lipid profile and Lp-PLA₂ levels were significantly increased in all patients groups compared to control. The level of Lp-PLA₂ was significantly increased in overlap syndrome than OSA and COPD patients and was positively correlated with the severity of arousal in all patients groups. Conclusion: patients with overlap syndrome are more liable to cardiovascular disorders than either OSA or COPD alone and Lp-PLA₂ may be used as an independent predictor of cardiovascular disorders in patients with OSA, COPD and overlap syndrome.