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Title: Cardiac troponin T levels increase overnight in patients with stable chronic obstructive pulmonary disease

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Body: Background: Patients with chronic obstructive pulmonary disease (COPD) have increased levels of cardiac troponin T (cTnT), but the pathophysiological mechanisms underlying cTnT increase in COPD are not established. Aims and Objectives: To investigate diurnal variations in levels of cTnT in patients with stable COPD. Material and Methods: Among 92 stable COPD patients, serum high sensitivity (hs)-cTnT was measured at 14.00pm (T1) and 08.00am (T2) and 14.00pm (T3) the following day. Diurnal variation was tested with Friedman's test and Wilcoxon paired test. Potential nocturnal influences on hs-cTnT levels by apnea-hypopnea index, mean oxygen saturation (SpO2) and arousal index (AI) were explored. Results: A total of 33 patients (36%) had detectable levels of hs-cTnT (≥5ng/L) at T1, while 35 (38%) and 32 (34%) had detectable levels at T2 and T3, respectively. The geometric means of hs-cTnT among patients with detectable hs-cTnT show a morning peak (Figure 1). The variation of cTnT was significant (p=0.001). Post-hoc tests showed a significant change both between T1 and T2 (p=0.03) and T2 and T3 (p=0.002). Diurnal variation of cTnT was only present among patients with infra-median values for mean SpO2 and AI. Conclusion: Diurnal variation and a morning peak of circulating hs-cTnT are present in patients with stable COPD. Nocturnal hypoxia and sleep architecture parameters may contribute to such a variation.