Abstract: P547

Ischemic preconditioning, a potential cardioprotective mechanism of sleep apnea during acute myocardial infarction

Authors:
O Ludka¹, R Stepanova¹, T Kara², J Spinar³, P Kala³, ¹International Clinical Research Center, St. Anne’s University Hospital, University Hospital Brno, Masaryk University - Brno - Czechia, ²Division of Cardiovascular Diseases, Department of Internal Medicine, Mayo Clinic and Foundation - Minnesota - United States of America, ³Department of Internal Medicine and Cardiology, University Hospital Brno - Brno - Czechia,

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Background: Sleep apnea (SA) is associated with intermittent hypoxemia that may lead to ischemic preconditioning in the myocardium. This potential cardioprotective effect of SA may play a role in the development of non-ST-elevation myocardial infarction (NSTEMI) versus ST-elevation myocardial infarction (STEMI) during acute ischemia. Purpose: We prospectively investigated the prevalence of these two types of MI in patients with SA. Methods: We prospectively studied 607 consecutive patients admitted with the diagnosis of acute MI (both NSTEMI and STEMI). All subjects underwent sleep evaluations using a portable diagnostic device after at least 48 h post-admission, provided they were in stable condition. Results: SA was present in 65.7% and NSTEMI in 30% of patients. The prevalence of NSTEMI increased with increasing severity of SA (p<0.001). The relative frequency of NSTEMI vs STEMI in patients without SA and with mild SA was 59.4% vs 70.1% respectively (p=0.01). In patients with moderate to severe SA (AHI = 15 events/hour), the relative frequency of NSTEMI and STEMI was 40.6% vs 29.9% respectively (p=0.01). Moderate to severe SA was an independent predictor of having a NSTEMI (p=0.021). In moderate to severe SA patients, those with NSTEMI had lower peak troponin T than those with STEMI (1.538±2.771 µg/l vs 3.085±3.127 µg/l, p<0.001) and similar left ventricular ejection fraction (49.07±13.43% vs 47.60±11.53%, p=0.413). Conclusion: The prevalence of NSTEMI increases with increasing severity of SA. This finding may suggest a cardioprotective role of SA, which may attenuate the development of STEMI, perhaps through ischemic preconditioning.