Obstructive sleep apnoea in acute coronary syndrome

Whether patients with coronary artery disease should be screened for obstructive sleep apnoea, and consequently treated with continuous positive airway pressure (CPAP), regardless of excessive daytime sleepiness, is a hot topic. Previous randomised controlled trials on the effect of CPAP on cardiovascular outcomes in patients with sleep apnoea—namely, the RICCADSA[1] and SAVE[2] trials—reported neutral findings in intention-to-treat analyses. Thus, it is not surprising that current results from the ISAACC trial (examining the effect of obstructive sleep apnoea and CPAP on cardiovascular events in patients with acute coronary syndrome), reported by Manuel Sánchez-de-la-Torre and colleagues,[3] are similarly neutral, given that the overall CPAP adherence was too low (mean 2·8 h per night) to expect an effect. Indeed, in the RICCADSA trial, post-hoc analyses revealed a significant reduction in composite cardiovascular and cerebrovascular outcomes for patients who used the device for at least 4 h per night, after adjustment for baseline comorbidities, compared with those who used the device less than 4 h and who were randomised to no CPAP (hazard ratio [HR] 0·29, 95% CI 0·10–0·86).[1] Furthermore, in the SAVE trial, a risk reduction regarding cerebral events was found for the adherent group after propensity score matching, compared with patients who were allocated to no CPAP (HR 0·52, 95% CI 0·30–0·90).[2] A meta-analysis also emphasised the importance of CPAP adherence on composite cardiovascular and cerebrovascular outcomes.[4]

The null findings of the ISAACC trial are not generalisable to patients with obstructive sleep apnoea who have daytime sleepiness, as Sánchez-de-la-Torre and colleagues note. However, there are additional concerns to clarify to justify the conclusions drawn in the ISAACC study.

First, the reference group (ie, individuals without obstructive sleep apnoea, defined in this study as having an apnoea–hypopnoea index [AHI] of <15 events per h) is problematic because individuals with an AHI of 5–14 events per h have mild obstructive sleep apnoea by definition.[5] Because the exact total sleep time cannot be measured in a limited sleep study with cardiorespiratory polygraphy, some patients with an AHI of 10–20 events per h could have been misclassified as having obstructive sleep apnoea when they do not, or vice versa. A separate analysis for untreated obstructive sleep apnoea (AHI ≥15 events per h) versus no obstructive sleep apnoea (AHI <5 events per h) might give different results.

Second, one previous study[6] showed a high prevalence of obstructive sleep apnoea in patients with acute coronary syndrome. This high prevalence, however, did not persist 6 months later, indicating that the association between acute coronary syndrome and obstructive sleep apnoea might be bidirectional; indeed, it is probable that some of the patients with untreated obstructive sleep apnoea in the ISAACC trial did not have sleep apnoea at long-term follow-up.

Third, acute coronary syndrome include patient groups with or without ST-elevated myocardial infarction, and those with unstable angina. Moreover, percutaneous coronary intervention with stent, which is the most common treatment of acute coronary syndrome, is not reported at baseline.[3] The distribution of the subgroups with acute coronary syndrome, and those who received percutaneous coronary intervention, should have been adjusted for in the statistical models.

Last but not least, although the authors state that the ISAACC study focused on a homogenous population located in a country with high standards of health care,[3] almost half of the study population were current smokers at baseline, and a quarter reported alcohol use, which also might have contributed to the null findings.

Without having answers to the questions above, it would be unjust to suggest that it is not worth screening patients with acute coronary syndrome for obstructive sleep apnoea and considering CPAP therapy. Future research that includes a meta-analysis of individual patient data from the ISAACC and RICCADSA trials, as well as from the coronary artery disease subgroup of the SAVE cohort, could add further insights to better understand which patients with coronary artery disease will benefit from CPAP treatment.

I declare no competing interests.



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