



Association of obstructive sleep apnoea with cardiovascular events in women and men with acute coronary syndrome

Xiao Wang¹, Jingyao Fan¹, Ruifeng Guo¹, Wen Hao¹, Wei Gong¹, Yan Yan¹, Wen Zheng¹, Hui Ai¹, Bin Que¹, Dan Hu², Changsheng Ma³, Xinliang Ma⁴, Virend K. Somers⁵ and Shaoping Nie¹

¹Center for Coronary Artery Disease, Division of Cardiology, Beijing Anzhen Hospital, Capital Medical University, Beijing, China. ²Department of Cardiology & Cardiovascular Research Institute, Renmin Hospital of Wuhan University, Wuhan, China. ³Arrhythmia Center, Division of Cardiology, Beijing Anzhen Hospital, Capital Medical University, Beijing, China. ⁴Department of Emergency Medicine, Thomas Jefferson University, Philadelphia, PA, USA. ⁵Department of Cardiovascular Medicine, Mayo Clinic, Rochester, MN, USA.

Corresponding author: Shaoping Nie (spnie@ccmu.edu.cn)



Shareable abstract (@ERSpublications)

In patients with acute coronary syndrome, >40% of female patients had obstructive sleep apnoea (OSA). OSA was associated with an increased risk of long-term cardiovascular events following an acute coronary syndrome, particularly among women. <https://bit.ly/3TWKi8S>

Cite this article as: Wang X, Fan J, Guo R, et al. Association of obstructive sleep apnoea with cardiovascular events in women and men with acute coronary syndrome. *Eur Respir J* 2023; 61: 2201110 [DOI: 10.1183/13993003.01110-2022].

This single-page version can be shared freely online.

Copyright ©The authors 2023.

This version is distributed under the terms of the Creative Commons Attribution Non-Commercial Licence 4.0. For commercial reproduction rights and permissions contact permissions@ersnet.org

Received: 30 May 2022
Accepted: 18 Aug 2022

Abstract

Background The impact of sex on the association of obstructive sleep apnoea (OSA) with recurrent cardiovascular events following acute coronary syndrome (ACS) remains uncertain. This study sought to examine the association between OSA and long-term cardiovascular outcomes in women and men with ACS.

Methods In this prospective cohort study, we recruited 2160 ACS patients undergoing portable sleep monitoring between June 2015 and January 2020. The primary end-point was major adverse cardiovascular and cerebrovascular event (MACCE), including cardiovascular death, myocardial infarction, stroke, ischaemia-driven revascularisation or hospitalisation for unstable angina or heart failure.

Results After exclusion of patients with failed sleep studies, central sleep apnoea, regular continuous positive airway pressure therapy and loss of follow-up, 1927 patients were enrolled. Among them, 298 (15.5%) were women and 1014 (52.6%) had OSA (apnoea–hypopnoea index ≥ 15 events·h⁻¹). The prevalence of OSA was 43.0% and 54.4% in women and men, respectively. In 4339 person-years (median 2.9 years, interquartile range 1.5–3.6 years), the cumulative incidence of MACCE was significantly higher in OSA versus non-OSA groups in the overall population (22.4% versus 17.7%; adjusted hazard ratio (HR) 1.29, 95% CI 1.04–1.59; $p=0.018$). OSA was associated with greater risk of MACCE in women (28.1% versus 18.8%; adjusted HR 1.68, 95% CI 1.02–2.78; $p=0.042$), but not in men (21.6% versus 17.5%; adjusted HR 1.22, 95% CI 0.96–1.54; $p=0.10$). No significant interaction was noted between sex and OSA for MACCE (interaction $p=0.32$). The incremental risk in women was attributable to higher rates of hospitalisation for unstable angina and ischaemia-driven revascularisation.

Conclusions In hospitalised ACS patients, OSA was associated with increased risk of subsequent events, particularly among women. Female patients with ACS should not be neglected for OSA screening and dedicated intervention studies focusing on women with ACS and comorbid OSA should be prioritised.

