

Sleep Apnea as an Independent Risk Factor for All-Cause Mortality: The Busselton Health Study

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Background:

Previously published cohort studies in clinical populations have suggested that obstructive sleep apnea (OSA) is a risk factor for mortality associated with cardiovascular disease. However, it is unknown whether sleep apnea is an independent risk factor for all-cause mortality in a community-based sample free from clinical referral bias.

Methods:

Residents of the Western Australian town of Busselton underwent investigation with a home sleep apnea monitoring device (MESAM IV). OSA was quantified via the respiratory disturbance index (RDI). Mortality status was determined in 397/400 participants (99.3%) after up to 14 years (mean follow-up 13.4 years) by data matching with the Australian National Death Index and the Western Australian Death Register. Univariate analyses and multivariate Cox proportional hazards modelling were used to ascertain the association between sleep apnea and mortality after adjustment for age, gender, body mass index, mean arterial pressure, total cholesterol, high-density lipoprotein cholesterol, diabetes, and medically diagnosed angina in those free from heart attack or stroke at baseline (n = 380).

Results:

Among the 380 participants, 18 had moderate-severe OSA (RDI ≥ 15 /hr, 6 deaths) and 77 had mild OSA (RDI 5 to <15 /hr, 5 deaths). Moderate-to-severe OSA was independently associated with greater risk of all-cause mortality (fully adjusted hazard ratio [HR] = 6.24, 95% CL 2.01, 19.39) than non-OSA (n = 285, 22 deaths). Mild OSA (RDI 5 to <15 /hr) was not an independent risk factor for higher mortality (HR = 0.47, 95% CL 0.17, 1.29).

Conclusions:

Moderate-to-severe sleep apnea is independently associated with a large increased risk of all-cause mortality in this community-based sample