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Sleep disordered breathing and metabolic comorbidities across sex and menopausal status in East Asians: the Nagahama Study

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Metabolic comorbidities (hypertension, diabetes, dyslipidaemia, metabolic syndrome) contribute to SDB regardless of obesity grade. We should recognise the extremely high prevalence of moderate-severe SDB in patients with obesity and metabolic comorbidities. <https://bit.ly/3586fjg>

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ABSTRACT It is well known that the prevalence of sleep disordered breathing (SDB) is increased in patients with obesity or metabolic comorbidities. However, the way in which the prevalence of SDB increases in relation to comorbidities according to the severity of obesity remains unclear.

This cross-sectional study evaluated 7713 community participants using nocturnal oximetry ≥ 2 nights. SDB was assessed by the 3% oxygen desaturation index corrected for sleep duration obtained by wrist actigraphy (acti-ODI3%). SDB severity was defined by acti-ODI3%. Obesity was defined as body mass index ≥ 25 kg·m⁻².

The prevalence of SDB was 41.0% (95% CI 39.9–42.1%), 46.9% (45.8–48.0%), 10.1% (9.5–10.8%) and 2.0% (1.7–2.3%) in normal, mild, moderate and severe SDB, respectively, with notable sex differences evident (males>post-menopausal females>premenopausal females). Comorbidities such as hypertension, diabetes and metabolic syndrome were independently associated with the prevalence of moderate-to-severe SDB, and coincidence of any one of these with obesity was associated with a higher probability of

moderate-to-severe SDB (hypertension OR 8.2, 95% CI 6.6–10.2; diabetes OR 7.8, 95% CI 5.6–10.9; metabolic syndrome OR 6.7, 95% CI 5.2–8.6). Dyslipidaemia in addition to obesity was not additively associated with the prevalence of moderate-to-severe SDB. The number of antihypertensive drugs was associated with SDB (p for trend <0.001). Proportion of a high cumulative percentage of sleep time with oxygen saturation measured by pulse oximetry $<90\%$ increased, even among moderate-to-severe SDB with increases in obesity.

Metabolic comorbidities contribute to SDB regardless of the degree of obesity. We should recognise the extremely high prevalence of moderate-to-severe SDB in patients with obesity and metabolic comorbidities.