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## Obstructive sleep apnoea in patients with type 2 diabetes

An increased body mass index (BMI) is a risk factor for type 2 diabetes mellitus and obstructive sleep apnoea (OSA). The question whether this is just a shared risk factor or whether there is a deeper relationship has been addressed by West *et al*<sup>1</sup> who used an initial screening Berlin questionnaire followed by overnight oximetry in selected respondents. OSA was found to be highly prevalent in this patient group. Although BMI was the best predictor of OSA, type 2 diabetes conferred a significant extra increase in the likelihood of having OSA after allowing for BMI, age and neck size.

We have examined the risk of OSA in a district general hospital diabetes clinic. We used the Berlin questionnaire and assessed sleepiness using the Epworth score in 63 people (30 women) with type 2 diabetes and a BMI of >30 kg/m<sup>2</sup>. Diabetic control was assessed using HbA1C. Thirty-five patients (56%, 16 women) were found to have a high risk of OSA.

Despite the suggestion that improvement in sleep-disordered breathing using continuous positive airway pressure improves glucose intolerance in both the short and long term, no significant association was found between poor glycaemic control and the Berlin questionnaire risk group category.<sup>2,3</sup>

These results are similar to those of West *et al* and suggest the potential of a high burden of unrecognised OSA in people with diabetes. Furthermore, our findings are not restricted to the male population. We feel that clinicians

who manage patients with type 2 diabetes should have a heightened awareness of the increased likelihood of OSA in this group. The Berlin questionnaire is easy to use and is an attractive alternative in the initial screening for OSA, particularly where access to sleep studies and oximetry is very limited.

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## Screening for type 2 diabetes in patients with obstructive sleep apnoea

We read with much interest the findings in the recent paper by West *et al*<sup>1</sup> of the prevalence of obstructive sleep apnoea (OSA) in men with type 2 diabetes. Although there may have been selection bias in the questionnaire respondents, the findings support the hypothesis that OSA is common in this population and is likely to be underdiagnosed. OSA is known to be independently associated with an increase in

the cardiovascular risk factors that comprise the metabolic syndrome,<sup>2</sup> including diabetes mellitus and impaired glucose tolerance.<sup>3</sup>

We have reviewed our data on 156 successive patients with OSA recently diagnosed by polysomnography, 114 of whom (72 men) had glucose measurements checked at the time of diagnosis. Sixteen patients (14%) were already known to have diabetes or impaired glucose tolerance. Although only five newly diagnosed cases of diabetes were identified, a further two had a single raised fasting glucose level and four had raised non-fasting glucose levels. Thus, a total of 11 patients (9.6%) were identified by the screening process as potentially having diabetes or impaired glucose tolerance.

Unsurprisingly, the patients with diabetes or impaired glucose tolerance had higher mean body mass indices (37 vs 33.2 kg/m<sup>2</sup>), but there seemed to be little difference in either the Epworth score (11.8 vs 9.9) or in the apnoea-hypopnoea index (22.6 vs 24.4). These data support active screening of patients with newly diagnosed OSA for diabetes in order to allow earlier recognition and treatment.

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