Risk and Severity of Motor Vehicle Crashes in Patients with Obstructive Sleep Apnea Hypopnea.


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Obstructive sleep apnea hypopnea (OSAH) appears to be associated with an increased risk of motor vehicle crashes (MVC). However, its impact on crash patterns and particularly the severity of crashes has not been well described. We sought to determine whether OSAH severity influenced crash severity in patients referred for investigation of suspected sleep-disordered breathing. Objective crash data (including the nature of crashes) for patients with suspected OSAH for the 3 years prior to polysomnography were obtained from provincial insurance records and compared to an age and sex matched control group. Data were obtained for 783 patients with suspected OSAH and 783 matched controls. The patient group was 71% male, with a mean age of 50 years, a mean apnea-hypopnea index (AHI) of 22 events/hour and a mean Epworth sleepiness scale score of 10. There were 375 crashes, of which 252 were in patients and 123 in controls in the 3-year period. When compared to controls, patients with mild, moderate, and severe OSAH had an increased rate of MVC with relative risks (95% CI) of 2.6 (1.7, 3.9), 1.9 (1.2, 2.8), and 2.0 (1.4, 3.0) respectively, whereas patients with suspected OSAH and normal polysomnography (AHI 0-5) did not with a relative risk (95% CI) of 1.5 (0.9, 2.5 p=0.21). When we examined the impact of OSAH on MVC associated with personal injury, patients with mild, moderate, and severe OSAH had a substantially increased rate of MVC compared to controls with relative risks of 4.8 (1.8, 12.4), 3.0 (1.3, 7.0), and 4.3 (1.8, 8.9) respectively, whereas patients without OSAH had similar crash rates to control with a relative risk of 0.6 (0.2, 2.5). Very severe MVCs (head-on collisions or those involving pedestrians or cyclists) were rare but 80% of these occurred in OSAH patients (p=0.06). Patients with OSAH have increased rates of MVC with disproportionately increased rates of MVC associated with personal injury.

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