The prevalence of hand-arm vibration syndrome in male dentists

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ABSTRACT

Background: Dentists are exposed to high frequency vibration from pneumatic turbine drills. There is evidence that they have a higher prevalence of impaired sensory nerve function in their dominant hand compared to non-dominant hand and compared to controls. It has been suggested that this may be due to Hand Arm Vibration Syndrome (HAVS).

Aims: To estimate the prevalence of finger blanching and hand paraesthesia in the dominant hands of dentists compared to their non-dominant hands and to controls.

Methods: 340 general dental practitioners and 275 oral and maxillofacial surgeons were sent a postal questionnaire enquiring about finger blanching and hand paraesthesia.

Results: The number of female oral surgeons was too low to make a meaningful comparison so 187 male dentists and 171 male oral surgeons were entered into the study. Dentists reported a higher prevalence of ‘hand affected by cold (pain or colour change)’, finger blanching, numbness and ‘symptoms worse in the cold’ than the control group in all age ranges (P<0.001). Dentists also reported a higher prevalence of ‘hand affected by cold (pain or colour change)’ (P<0.001) and finger blanching (P<0.02) in their dominant compared to non-dominant hands. Presence of blanching, but not numbness or symptoms worse in the cold, was related to time worked as a dentist (mean difference 4.36 years, 95% confidence intervals 0.61 – 8.11, P<0.01) and to age (mean difference 4.66 years, 95% confidence intervals 1.07 – 8.26, P<0.01). Dominant hand blanching was associated with pain in the hand but not nocturnal hand pain or other upper limb pain. Dominant hand numbness, however, was associated with pain in the wrist/forearm and hand and with nocturnal hand pain. There was no association between hand symptoms and smoking status or diabetes.

Conclusion: Dentists reported significantly more finger blanching and symptoms worse in the cold in their dominant compared to non-dominant hands and compared to controls. This was not related to smoking, cervico-brachial pain or symptoms of carpal tunnel syndrome. The prevalence of hand paraesthesia was also significantly higher in
dentists but carpal tunnel syndrome could not be excluded as a cause. The symptom complex of finger blanching, hand pain, symptoms worse in the cold and hand paraesthesia in a group exposed to high levels of hand-transmitted vibration from dental drills raises the possibility that dentists may be at risk of HAVS.