Evaluation of the Efficacy for Various Treatments in Managing Sleep Bruxism (Montreal Studies)

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Purpose

The aim of this report is to summarize the efficacy of 5 experimental studies on sleep bruxism (SB) treatments using the comparative analysis "number needed to treat" (NNT) to provide an estimation of the treatment with the best possible impact.

Methods

Data from 38 healthy SB subjects (21 women, 17 men; 19 to 39 years of age), recruited according to tooth-grinding history (>3 nights/week), were analyzed across 5 randomized and controlled experimental trials: bromocriptine (dopaminergic agonist), propranolol (antihypertensive), clonidine (alpha 2 cardioactive), and 2 dental splint studies (upper and MAD). SB was confirmed by a polysomnographic recording over 2 nights (1st for habituation). Sleep and SB variables were recorded and scored for 2 additional experimental nights based on similar criteria for selection of subjects and scoring of outcomes. (Lavigne, 1996). Calculations for NNT = 1 / (proportion of subjects improved with active treatment - proportion of subjects improved with control treatment); NNT lower than 4 are considered as beneficial and harmful if negative (<0). The studies in the NNT comparison were homogenous since experimental designs, outcomes and selection criteria were similar (Altman, 1998; Walter, 2001). Calculations revealed that with:

- Dental splint (upper), a reduction of 41.1% in the SB index was observed and NNT = 1.5
- Dental splint (MAD), a reduction of 83.2% in the SB index was observed and NNT = 2.2
- Clonidine, a reduction of 46.2% in the SB index was noted and NNT = 3.2
- Propranolol, a very low reduction of the SB index (1.8%) and NNT = 0
- Bromocriptine, the SB index increase of 21% and the NNT was negative at -7

Results

The short-term use of dental splint was the treatment presenting the most important reduction in SB. Clonidine (1 night) had an important effect in reducing SB, although this was hampered by severe morning hypotension in 25% of subjects.

Conclusion

Further dose-dependant studies are needed before using clonidine in a clinical context. Research supported by: CIHR, FRSQ, CFI, Canada.

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