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COMMENTARY

Return of the TRD

Commentary on Lazard D, et al. The tongue-retaining device: Efficacy and side effects in obstructive sleep apnea. J Clin Sleep Med 2009;5:431-438.

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The current emphasis on health care reform in the US encourages the choice of treatment based on evidence of best outcome. Given this thrust, it is good to have the additional data provided in this article to help guide the decision of appropriate therapy for obstructive sleep apnea (OSA).

When the research literature on the efficacy of oral appliances (OA) for the control of OSA was reviewed recently[1] by a committee appointed by the Standards of Practice Committee of the American Academy of Sleep Medicine, the tongue-retaining device (TRD) was tested in very few of the published studies. The literature surveyed, which covered the years 1995 to 2004, found that mandibular advancement devices (MADs) were overwhelmingly the choice of OA being tested. Within this class of OA, there are many differing features, but all work on the same principle—to advance the mandible and thus create more room mechanically in the posterior airway. The TRD, on the other hand, holds the tongue forward by suction, preventing the flaccid tongue from retrolapsing with inspiration and so blocking the airway. Some studies in that review compared the tolerance and effectiveness of an OA to that of the most frequently prescribed treatment, nasal continuous positive airway pressure (CPAP), in cross-over designs. The justification of having an OA as an option to CPAP is some patients' refusal to accept CPAP or their failure to use it enough nights or hours to be effective. Studies in which patients were tested on both an OA and CPAP report that the OA is less effective but better tolerated and preferred by patients when given the choice.[2]

The study by Lazard et al.[3] has much to commend it; it included a large number of patients, more than most studies using a TRD (55 had an initial diagnostic polysomnography study before using the TRD and a second with this device in place). The follow-up period, although variable, is also longer (1 to 91 months, median = 4) than in many studies. Compliance was checked only by a phone interview after 5 years. The data analysis is careful, and the article is well written. Because this study did not involve a comparison test with another type of OA or with CPAP for the same patients, the authors compare their findings to those reported in other studies. The authors conclude that the efficacy of the TRD based on control of apnea was similar to that reported in studies using a MAD.

However, the data from this study are not strictly comparable with others involving either a MAD or TRD, as they excluded patients whose initial polysomnogram identified their apnea to be "positional." These patients were withdrawn from this study and treated to avoid the supine sleep position. Because positionality has been established to be a strong predictor of TRD efficacy,[4] this sample, as the authors admit, is biased. In fact, because they did not enroll the patients most likely to succeed, it is biased against the TRD having an equal or better outcome than has been reported in studies in which the sample was more inclusive. The sample of 55 consisted of patients with severe OSA who had failed treatment with CPAP and some for whom position training was not effective. Their initial assessment of apnea severity is not specified, but, since they failed position training, they are less likely to be successful with a TRD. The remaining patients with mild or moderate OSA had a TRD as a first treatment.

Given the development of good predictors of effectiveness of the TRD, (apnea severity, positionality, and nasal patency), and endorsement by the Standards of Practice report for mild and moderate OSA, why has the TRD not had more use? I suggest one reason is the dominance of sleep clinicians trained in pulmonary medicine who are more familiar and comfortable with CPAP as a treatment choice in spite of its poorer adherence in those whose apnea is mild or moderate.[1] The authors suggest a different reason the TRD is less popular than the MADs—its "esthetic" appearance. On this criterion, it beats CPAP hands down. I believe that, at least in the US, another reason MADs are preferred over a TRD may be related to billable hours. If the sleep clinician refers the patient to a dentist for an OA, they may choose to fit a MAD because it is more labor intensive, involving many more appointments to fit and adjust it. Some also do additional expensive testing, such as videoendoscopy, cephalometrics, and at-home sleep studies. The TRD is a simple 1-piece device that is usually fitted in one appointment. It does not have the problem of a shift in bite, which has been noted in some with the long-term use of a MAD.[1] The TRD is similar in effectiveness to other OA, and, because patients prefer it over

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CPAP[1] and so use it more often and for more hours, it meets the best practice test.

There is general agreement that CPAP should be the treatment of choice for those severe cases (apnea-hypopnea index > 40), but these patients should also be trained to avoid supine sleep, lose weight, stop smoking, and exercise.[5] When these good health habits have brought down their apnea symptoms, but on retesting the patient is still mildly or moderately apneic and/or snoring and sleepy, they can then turn in their CPAP for a TRD.

DISCLOSURE STATEMENT

Dr. Cartwright has indicated no financial conflicts of interest.

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