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Long-term Results for Maxillomandibular Advancement to Treat Obstructive Sleep Apnea: A Meta-analysis

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Abstract

Objective: To examine outcomes in the intermediate term (1 to <4 years), long term (4 to <8 years), and very long term (≥8 years) for maxillomandibular advancement (MMA) as treatment for obstructive sleep apnea (OSA).

Data sources: The Cochrane Library, Google Scholar, Embase, Cumulative Index to Nursing and Allied Health, and PubMed/MEDLINE.

Review methods: Three authors systematically reviewed the international literature through July 26, 2018.

Results: A total of 445 studies were screened, and 6 met criteria (120 patients). Thirty-one patients showed a reduction in apnea-hypopnea index (AHI) from a mean 48.3 events/h (95% CI, 42.1-54.5) pre-MMA to 8.4 (95% CI 5.6, 11.2) in the intermediate term. Fifty-four patients showed a reduction in AHI from a mean 65.8 events/h (95% CI, 58.8-72.8) pre-MMA to 7.7 (95% CI 5.9, 9.5) in the long term. Thirty-five showed a reduction in AHI from a mean 53.2 events/h (95% CI 45, 61.4) pre-MMA to 23.1 (95% CI 16.3, 29.9) in the very long term. Improvement in sleepiness was maintained at all follow-up periods. Lowest oxygen saturation improvement was maintained in the long term.

Conclusion: The current international literature shows that patients with OSA who were treated with MMA maintained improvements in AHI, sleepiness, and lowest oxygen saturation in the long term; however, the mean AHI increased to moderate OSA in the very long term. Definitive generalizations cannot be made, and additional research providing individual patient data for the intermediate term, long term, and very long term is needed.

Keywords: mandibular advancement; meta-analysis; sleep apnea syndromes; systematic review.

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