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Providing Solutions for Complex Dental Problems

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Novel Porous Oral Patches for Patients with Mild Obstructive Sleep Apnea and Mouth Breathing

Huang TW, Young TH.

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Habitual open-mouth breathing (OMB) during sleep can cause snoring and obstructive sleep apnea (OSA). This study used a porous oral patch (POP) to treat patients with mild OSA and OMB during sleep. Patients with ≥ 5 events hourly but < 15 hourly on the apnea-hypopnea index (AHI) were enrolled. All patients slept with their mouths closed by using the POP, which is a porous skin pad consisting of 3 layers: silicone sheet, polyurethane foam, and polyurethane film. Before treatment and during treatment, subjective outcomes were assessed using the Epworth Sleepiness Scale (ESS) and visual analog scale (VAS) of snoring. Objective outcomes were assessed using polysomnography and cephalometry. Thirty patients were enrolled in this study. All patients slept with their mouths closed while using a POP.

The ESS and VAS of snoring scores were 8.1 and 7.5 before the POP, respectively, in contrast to 5.2 and 2.4 while using a POP, respectively. The median AHI score was significantly decreased by using a POP from 12.0 per hour before treatment to 7.8 per hour during treatment. The snoring intensity and median snoring index were 49.1 dB and 146.7 per hour before the POP, respectively, which decreased to 41.1 dB and 40.0 per hour while using a POP, respectively. Cephalometry revealed that the retropalatal space and retrolingual space were 7.4 mm and 6.8 mm before the POP, respectively, compared with 8.6 mm and 10.2 mm during treatment, respectively.

The POP is a useful device to treat patients with mild OSA and habitual OMB.