

Antioxidant Effects of Oropharyngeal Rehabilitation After Transoral Robotic Surgery in Patients with Obstructive Sleep Apnea

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Objective: To demonstrate the effects of postoperative oropharyngeal rehabilitation on inflammatory mediators and antioxidant capacity in adult obstructive sleep apnea patients.

Methods: Obstructive sleep apnea patients were recruited and divided into conservative treatment group (n = 17), surgery group (n = 23), or surgery combined with oropharyngeal rehabilitation group (n = 19) by their willingness. Polysomnography data and the concentration of inflammatory mediators and antioxidant capacity were determined at baseline, after 6 weeks and 18 weeks of treatment.

Results: The data of fifty-nine patients was analyzed. Post-treatment percent change of apnea–hypopnea index in rapid eye movement sleep was positively correlated with that of interleukin-6 (0.641, 95%CI 0.598 to 0.685; P<.001). Compared with the patients in control group, those in surgery combined with oropharyngeal rehabilitation group had significantly reduced post-treatment percent change of interleukin-6 (-77.273, 95%CI -144.580 to -9.966; P=.216). In addition, the concentration of interleukin-6 (-3.423, 95%CI -6.638 to -0.207; P=.037) and matrix metalloproteinase-9 (-20.517, 95%CI -40.584 to -0.450; P=.045) exhibited significantly decreased in the surgery combined with oropharyngeal rehabilitation group. The level of total antioxidant capacity

exhibited significantly improved in the surgery combined with oropharyngeal rehabilitation group as compared to the surgery-only group (0.034, 95%CI 0.005 to 0.063; P=.020).

Conclusion: The presented results demonstrate postoperative oropharyngeal rehabilitation could decreased the serum level of inflammatory mediators and increased antioxidant capacity. Results from this study could potentially be targeted by combination of different treatments.

Key words: Obstructive Sleep Apnea, Transoral robotic surgery, Oropharyngeal Rehabilitation, Antioxidant Capacity, Inflammatory mediators

中文題目：口咽肌肉復健對於達文西術後的阻塞型睡眠呼吸中止症患者之抗氧化效應

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