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Positive Airway Pressure Treatment Reduces Glycated Hemoglobin (HbA1c) Levels in Obstructive Sleep Apnea Patients: Longitudinal Data from the Esada

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Objectives: Patients with obstructive sleep apnea (OSA) have an increased risk of developing metabolic disease such as diabetes mellitus. Positive airway pressure (PAP) therapy is the gold standard treatment for OSA. Although PAP can be a very effective therapy for OSA, the effects of such treatment on comorbidities such as type 2 diabetes mellitus (DM) is not sufficiently clarified. The objective of our study was to assess the effect of PAP treatment on the glycemic control in OSA patients.

Methods: Glycated hemoglobin (HbA1c) was assessed in patients of the European Sleep Apnea Database (ESADA) [n=1608, 13 centers, 74.2% males, mean age 53.9±10.8, body mass index (BMI) 32.8±7.0 and apnea hypopnea index (AHI) 40.4±24.5] at baseline and following PAP therapy (>90 days).

Results: Hb1Ac was reduced at follow-up from 5.98±1.01% to 5.93±0.98% (p=0.001, mean treatment duration 378.9±423.0 days). Subsequently, HbA1c decrease was more pronounced in diabetic patients (-0.152±1.022, p=0.019), severe OSA patients (-0.097±0.678, p=0.005), and morbidly obese patients (-0.1989±0.81446, p<0.001). HbA1c change was most pronounced in patients with weight reduction >5 kilos at follow-up (-0.379±0.988, p<0.001).

Conclusion: Overall HbA1c reduction with PAP therapy was limited. However, a clinically relevant HbA1c reduction was observed in severe OSA, in patients with DM, in obese patients and in combination with weight reduction.

Keywords: Glycated hemoglobin, sleep apnea, PAP therapy