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**Title:** The influence of obstructive sleep apnoea and obesity on adiponectin, leptin, IGFBP-1 and HOMA-IR

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**Body:** Obstructive sleep apnea (OSA) is associated with hormonal alterations that increase the risk for insulin resistance (IR). The pathophsyiologic mechanisms that link OSA and IR are unclear and are frequently confounded by obesity. The aim of this study was to investigate the independent role of apneas and obesity on plasma adiponectin, leptin, insulin-like growth factor binding protein 1 (IGFBP-1), and homeostasis model assessment-IR (HOMA-IR). We studied 111 untreated OSA patients (95 males; mean age 55.0±13.2 years). Patients were divided into two groups according to apnea-hypopnea index (AHI). Patients with AHI<20 (first group; n=33; 15 non-obese and 18 obese patients), and patients with AHI>20 (second group; n=71; 19 non-obese and 52 obese patients). Plasma adiponectin, leptin, IGFBP-1, and HOMA-IR were determined by ELISA kit. Patients of the first group had increased leptin (p=0.009) and IGFBP-1 (p=0.009) and decreased HOMA-IR (p=0.03) in comparison with the patients of the second group. In the first group, non-obese patients had decreased leptin (p=0.02) and increased IGFBP-1 (p=0.01) in comparison with obese patients. In the second group, non-obese patients had decreased leptin (p=0.008) in comparison with obese patients.

Between non-obese patients of the two groups only IGFBP-1 was different (p<0.001). Obesity is associated with increased leptin and decreased IGFBP-1. OSAS is associated with decreased IGFBP-1.