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Title: Clinical parameters and biomarkers for the early detection of impaired glucose tolerance in OSA patients

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Body: The role of different clinical parameters regarding inflammation and oxidative stress has largely been debated in the etiology of impaired glucose tolerance in OSA patients. To determine the plasma levels of free fatty acids (FFA) and resistin in patients with OSA and impaired glucose tolerance (IGT) and compare them to those with normal blood glucose (NBG). 30 patients with newly diagnosed OSA have participated in the study. OSA was defined using a full polysomnography study. The glucose metabolism was investigated by oral glucose tolerant test. Blood glucose and IRI were determined on the 0, 60th, 120th, 180th min. 18 patients were with newly diagnosed IGT. 12 patients had NBG. Resistin (RayBio) and FFA (Wako) were determined in both groups. IRI was 25,29 mU/l in IGT patients. In patients with NBG, IRI was 21,3mU/l. BMI did not differ significantly between patients with IGT and NBG. BMI was 40,42 in patients with IGT and 41,7 in those with NBG. AHI (60,8) was higher in patients with NBG compared to those with IGT – 50,6. Patients with NBG had also higher plasma levels of FFA – 0,360mmol/l/ compared to patients with IGT – 0,305mmol/l. Only resistin was higher - 4,46ng/ml in IGT patients compared to NBG – 3,98 ng/ml. IRI in IGT patients was 25,29mU/l and correlated best to the levels of resistin ($p<0,05$). The commonly used clinical parameters – BMI, AHI, FFA were higher in patients with OSA and NBG. They are not reliable clinical markers for the early detection of impaired blood glucose metabolism in OSA patients. Only resistin correlated to the levels of IRI and could be applied as a predictor and early detection marker of impaired blood glucose metabolism in OSA patients.