THE RELATIONSHIP BETWEEN INSULIN RESISTANCE AND CAROTID ARTERY INTIMA-MEDIA THICKNESS IN OBESE AND MORBIDLY OBESE WOMEN

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Background: The aim of this study is to compare insulin resistance and carotid intima media thickness (CIMT) between obese, morbid obese and healthy women and demonstrate whether there is a relation between these parameters focusing mainly on morbid obese women. Materials and methods: Twenty-five morbid obese women (body mass index (BMI) ≥ 40 kg/m²), 25 obese women (BMI 30-39.9 kg/m²) and 25 age matched healthy women (BMI 18.5-24.9 kg/m²) were recruited for the study. None of the subjects had diabetes mellitus. BMI, waist to hip ratio, lipid profiles, fasting glucose and insulin levels, insulin resistance (by HOMA) and CIMT (common carotid, internal carotid and bifurcation measurements) were compared among the three groups and between obese and morbid obese women. Results: CIMT, HOMA, triglyceride, HDL cholesterol, fasting glucose and insulin levels were higher in obese and morbid obese women (all p’s<0.05). In the morbid obese women, internal carotid IMT was positively correlated with fasting insulin (r=0.40, p=0.03). In the combined group of obese and morbid obese women, internal carotid IMT was positively correlated with both fasting insulin and HOMA (r=0.35, p=0.01 and r=0.30 and p=0.04, respectively). Conclusion: Increased CIMT is an early sign of atherosclerosis in non-diabetic obese women as well and is related to both hyperinsulinemia and insulin resistance.