



METABOLIC SYNDROME AND MUSCLE MASS

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Background: Low skeletal muscle mass is an emerging risk factor for metabolic disorders. In this study, we aimed to evaluate the relationships between fat mass, muscle mass, muscle fat mass ratio, total fat mass, abdominal fat mass ratio by comparing the body compositions in obese women with and without metabolic syndrome

Methods: Totally 89 obese women (mean \pm SD age 42,1 \pm 12 years, BMI 36,5 \pm 4,2%) with newly diagnosed metabolic syndrome (MS, N=64, case group) and without metabolic syndrome (NMS, N=25, control group) were included into study. Body composition was measured by bioelectrical impedance analysis (BIA). Metabolic syndrome was defined using the International Diabetes Federation 2005 diagnostic criteria.

Results: It was found that subjects with MS had 57,2 \pm 13,2 kg muscle mass, 41,2 \pm 8,9 kg of fat mass. Their muscle/fat ratio was 1,46 \pm 0,49 and total fat/abdominal fat ratio was 1,99 \pm 0,25. Subjects without MS had 53,5 \pm 8,4 kg of muscle mass, 39,2 \pm 9,3 kg of fat mass. Their muscle/fat ratio was 1,44 \pm 0,42 and total fat/abdominal fat ratio was 1,96 \pm 0,37 and there was no statistical significant difference ($p > 0,05$). On the other hand subjects who had MS and non-MS, fasting serum insulin and HOMA-IR values were 21,1 \pm 11,8 μ U/mL and 11,3 \pm 5,5; 5,5 \pm 3,5 μ U/mL and 2,7 \pm 1,5, respectively ($p < 0,0.1$).

Conclusion: There is evidence that reduction in muscle mass and muscle/fat ratio is a risk factor for metabolic syndrome, but we did not find any significant reduction of muscle mass in subjects with MS in this study. This study should be redesigned in larger population to evaluate the meaning of these results. This may be explained by the anabolic effect of increased serum insulin levels in metabolic syndrome patients

