EFFECT OF AEROBIC PHYSICAL TRAINING ON BODY MASS INDEX, BODY FAT, LEAN BODY MASS AND ABDOMINAL CIRCUMFERENCE

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Introduction. The incidence of overweight and obesity is growing worldwide and is leading to metabolic syndrome (MetS). MetS has 5 fold increased risk of diabetes and 1.5-2 fold - of cardiovascular disease (CVD).

Purpose. To estimate the effect of aerobic physical training (ATP) on body mass index (BMI), body fat (BF), lean body mass (LBM) and abdominal circumference (AC) in subjects with MetS.

Method. The study included 70 obese middle-aged ($54,14 \pm 6,40$ years old, 64,3% women) subjects with MetS (updated NCEP ATP III) without overt CVD. Subjects were randomly recruited for moderate intensity ATP from the participants of the Lithuanian High Cardiovascular Risk (LitHiR) primary prevention program. BMI, BF, LBM and AC measurements (M) were performed before ATP (M 1), after 2 months of ATP (M 2) and 6 months after ATP (M 3). All subjects underwent supervised aerobic training of 8-week 30-40 min/day, 5 days/wk.

Results.

Diminishing of **body mass index** after ATP (M 2) compared with M 1 ($-0,41 \pm 0,81$ kg/m², $p < 0,001^*$) was found, was present in 6 months (M 3) compared with M 1 ($-0,72 \pm 1,44$ kg/m², $p < 0,001^{***}$) and compared M 2 ($-0,30 \pm 1,24$ kg/m², $p = 0,044^{**}$).

The measurements of **lean body mass** didn't revealed any differences ($p > 0,05^*, **, ***$).

After ATP (M 2) **body fat** was insignificantly lower than M 1 ($-0,74 \pm 3,18$ kg, $p = 0,055^*$) and remained almost unchanged in M 3 compared with M 2 ($+0,02 \pm 3,47$ kg, $p = 0,959^{**}$) but was significantly lower than M 1 ($-0,72 \pm 2,09$ kg, $p = 0,005^{***}$).

Diminished **abdominal circumference** after ATP in M 2 was found compared with M 1 ($-1,86 \pm 4,29$ cm, $p = 0,001^*$), but in M 3 it didn't differ from M 2^{**}, but was lower than M 1 ($-1,73 \pm 4,16$ cm, $p = 0,038^{***}$).

Conclusions. It was shown that after ATP and later on after 6 months BMI, BF and AC but not LBM diminished significantly.