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POSTER PRESENTATION – P22

INTERLEUKIN RESPONSE TO COMBINED AEROBIC – RESISTANCE TRAINING AND DIETARY INTERVENTION IN MEN WITH ABDOMINAL OBESITY

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Background: Chronic low-grade inflammation links abdominal obesity with insulin resistance, adverse body composition and cardiometabolic risk. Among inflammatory mediators, IL-6 and IL-8 may reflect obesity-related inflammation and the response to lifestyle intervention.

Objective: To evaluate the effects of a 6-week aerobic–resistance training program, with or without dietary intervention, on interleukins, insulin sensitivity, cardiometabolic indices and body composition in men with abdominal obesity.

Subjects and methods: Forty-four men with abdominal obesity (waist circumference: 110.2±8.8 cm; BMI: 32.0±3.8 kg/m²) were randomized to a control group (CG, n=12), exercise group (EG, n=16), or exercise-plus-diet group (EDG, n=16). Outcomes were assessed at baseline and after 6 weeks and included IL-6, IL-8, CRI I, CRI II, BF/BM, FFM/BM, and ABD/BM. Group, time, and interaction effects were analysed using mixed ANOVA with post hoc testing, and effect size was expressed as partial eta squared (ηp^2).

Results: The strongest anti-inflammatory effect was observed for IL-6. Its concentration decreased from 8.72±5.51 to 4.56±4.21 pg/mL in EDG (−47.7%, $p<0.01$) and from 8.83±6.44 to 6.17±6.17 pg/mL in EG (−30.1%, $p=0.02$), whereas no significant change was found in CG. Significant effects for IL-6 were confirmed for group ($p=0.01$; $\eta p^2=0.18$), time ($p=0.01$; $\eta p^2=0.03$) and group-by-time interaction ($p=0.03$; $\eta p^2=0.03$). IL-8 showed no significant changes despite a numerical decrease in both intervention groups. The most favourable accompanying changes were observed in EDG, including lower BF/BM ($p<0.01$; $\eta p^2=0.03$), lower ABD/BM ($p<0.01$; $\eta p^2=0.04$) and higher FFM/BM ($p<0.01$; $\eta p^2=0.02$). CRI I also decreased in EDG ($p=0.01$), whereas CRI II decreased over time and interaction ($p=0.01$), with the greatest reduction in EDG.

Conclusions: Combined exercise and dietary intervention produced the most favourable inflammatory and metabolic response, reflected by a marked reduction in IL-6. These findings support combined lifestyle treatment over exercise alone for improving inflammatory status in men with abdominal obesity.

Keywords: Adipokines; Abdominal obesity; Diet; Physical activity; Inflammatory markers; Insulin resistance.