

Antiandrogens in Hormonal Contraception Limit Muscle Strength Gain in Strength Training: Comparison Study

Lana Ružić, Branka R. Matković, Goran Leko

Zagreb University School of Kinesiology, Zagreb, Croatia

Aim. To determine antiandrogen effects on muscle strength gain and fat-free mass increase during exercise in women using hormonal contraception with antiandrogen content.

Methods. The study included 50 women (age range, 18-30 years; mean±SD, 26±3) using hormonal contraception for at least 12 months before the beginning of the study. They were divided into two groups: "antiandrogen" group (n=26) and "estrogen-progestogen" group (n=24) groups. The subjects participated in strength training sessions 3 times a week during 16 weeks. Initially, there were no differences between the groups in fat-free mass, muscle strength, or maximum oxygen uptake. The parameters were measured before, during, and after the training period.

Results. After the training period, the mean increase of fat-free mass was significantly greater in the estrogen-progestogen group ($p<0.001$). The mean gain in the muscle strength (in Newtons) was also more evident in estrogen-progestogen group (1289.0 ± 17.1 N vs 101.9 ± 18.5 N; $p<0.001$). There were no differences in the maximum oxygen consumption (VO_{2max}).

Conclusion. Antiandrogens had a negative effect on muscle strength, minimizing the effects of strength training in women. Hormonal contraception containing antiandrogens should be avoided in young exercising women.

Key words: androgen antagonists; body composition; contraception; exercise; physical fitness; skinfold thickness; women