Strength training and nandrolone decanoate decreased myostatin expression #29

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Nandrolone decanoate is a androgenic anabolic steroid (AAS) which targets the satellite cells in skeletal muscles. These cells are considered the stem cells of skeletal muscle, and they are essential for muscle growth and repair. Myostatin is a negative regulator of muscle mass that inhibits myoblast proliferation and differentiation. Recognizing the mechanisms related to AAS action in skeletal muscle is critical for a better understand of muscular physiology under AAS use. The aim of this study was to investigate the effects of aquatic plyometric training (APT) with overload associated with AAS on the gastrocnemius muscle of rats. Animals were grouped into: sedentary (S); S with AAS (AAS); trained (T); and T with AAS (AAST). Exercised groups performed jumps in water: 4 sets of 10 jumps each and 30-second rest interval between series, for 7 weeks with a progressive overload of 50 to 80% of body weight and were killed after the last exercise session. AAS (5 mg/kg – supraphysiological dose) was injected subcutaneously. One-way Anova and Turkey post hoc tests were used. Myostatin mRNA expression was determined by real-time RT-PCR. $p<0.05$ was considered statistically significant. APT did not change myostatin expression ($p=0.873$). However, the interaction with AAS downregulated myostatin ($p=0.039$). EAA and EAAT groups expressed less myostatin than the group T ($p=0.013$ and $p=0.009$, respectively). These results should be taken with care, since other variables related to muscle remodeling should be evaluated.

Key words: resistance training; androgenic anabolic steroids; myostatin.

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