

HISTOPATHOLOGICAL ANALYSIS OF SUBCHRONIC ADMINISTRATION OF OXANDROLONE IN CARDIAC, SKELETAL MUSCLE AND SPLEEN OF AGED FEMALE RATS

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INTRODUCTION: Sarcopenia is a prevalent condition among elderly women, associated with functional decline and reduced quality of life. Given the need for effective therapeutic alternatives, anabolic androgenic steroids, such as oxandrolone, have garnered attention due to their potential to enhance muscle trophism. Although its clinical application remains not fully elucidated, preliminary studies have reported promising outcomes. Nevertheless, further investigation is warranted to assess the efficacy and safety of this intervention, as the use of steroids may be associated with cardiovascular and other systemic alterations.

OBJECTIVE: To evaluate the histopathological effects of repeated oxandrolone administration on the cardiac muscle, skeletal muscle, and spleen of aged female Wistar rats. **METHODS:** Twenty-four aged female Wistar rats (20 months old) were randomly assigned to two experimental groups: oxandrolone (0.05 mg/kg/day) and vehicle (corn oil). Treatments were administered once daily by oral gavage, at the same time each day, for 28 consecutive days. The selected dose corresponds to the human equivalent dose (10 mg/day) commonly used for sarcopenia prevention. Throughout the experiment and data analysis, researchers remained blinded to group allocation to minimize bias. On day 29, animals were euthanized, and the heart, soleus muscle, and spleen were collected, fixed in buffered formalin, and processed for histopathological examination. Tissue sections were evaluated under light microscopy using a standardized scoring system. Data were analyzed using Student's *t*-test, with statistical significance set at $p < 0.05$. **RESULTS:** Oxandrolone treatment did not induce histopathological alterations in skeletal muscle fibers, which maintained fascicular organization and peripheral nuclei, with no evidence of atrophy, increased vascularization, or inflammatory infiltration. Likewise, cardiac tissue showed no signs of hydropic, hyaline, or fatty degeneration, cytoplasmic vacuolization, congestion, hemorrhage, necrosis, atrophy, inflammatory infiltration, or peripheral nuclei. No histopathological changes were observed in the spleen. Scoring analysis confirmed the absence of significant differences between the experimental groups. **CONCLUSION:** Repeated oxandrolone administration in aged female rats did not result in histopathological changes in the analyzed tissues.

Keywords: Anabolic androgenic steroids; muscle tissue; aging.

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