Histological Study on the Effect of Nandrolone on the Structure of Skeletal Muscle of Adult Male Albino Rat Subjected to Physical Exercise

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Histology and Cell Biology

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Dedication

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List of Abbreviations

AAS	Androgenic anabolic steroids.
ANOVA	Analysis of variant.
DHT	Dihydrotestosterone.
DNA	Deoxyribonucleic acid.
GABA	Gamma amino butyric acid.
H&E	Hematoxylin and Eosin.
P value	Probability of significance value.
RNA	Ribonucleic acid.
SGOT	Serum glutamic oxaloacetic transaminase.
SGPT	Serum glutamic-pyruvic transaminase.
TNF α	Tumor Necrosis Factor alpha.
TEM	Transmission Electron microscope.
VEGF	Vascular Endothelial Growth Factor.

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Abstract

Background: Nandrolone decanoate is one of androgenic anabolic steroids (AAS). It is used by athletes in supra-physiological doses to enhance muscle performance. Recently, researches reported that training produced beneficial dynamic changes in skeletal muscles in contrary to AAS.

Aim of the work: to investigate the local effect of nandrolone on the structure of the skeletal muscle of rats subjected to physical exercise.

Materials and methods: Forty-two adult male albino rats of average weight 150-200 gms were divided into five groups, group I: a control group, group II: rats were injected in the right gastrocnemius muscle with nandrolone (5mg/kg twice weekly for six weeks), group III: a training group that performed a specified training program (swimming 5 days/week for six weeks), group IV: a steroid and training group that were injected with nandrolone and performed the training program and group V: a Recovery group that were treated as group IV but the rats were left to recover for four weeks. The right gastrocnemius muscles were dissected out and processed for light and electron microscopic examination. Morphometric measurements and statistical analysis were performed.

Results: Splitting of the muscle fibers, mononuclear cellular infiltration, congested blood vessels and significant increase in the interstitial tissue collagen were observed in rats of both groups II and IV. Separation between the myofibrils, loss of