EFFECT OF CHRONIC SALBUTAMOL ADMINISTRATION ON GROWTH AND BIOCHEMICAL CHANGES IN STRIATED AND CARDIAC MUSCLES OF SPRAGUE-DAWLEY RATS.

4436372 SCPA/M

T. (Ph.D.)

Title of the Thesis

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In the study, rats were divided into two groups: control group and experimental group. The experimental group received chronic administration of salbutamol, while the control group received saline solution. The growth and biochemical changes in striated and cardiac muscles were investigated.

The results showed that chronic administration of salbutamol had a significant effect on the growth and biochemical changes of the muscles. The weight gain and muscle fiber size were increased in the experimental group compared to the control group. Additionally, the biochemical parameters such as ATPase and SDH activities were also altered.

The findings suggest that chronic administration of salbutamol may have a potential in the treatment of certain conditions related to muscle growth and function. Further studies are required to validate these findings and explore the mechanisms underlying these changes.

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ABSTRACT

The effects of chronic oral administration of salbutamol, at 10 times the therapeutic dose, were studied in male albino (Sprague-Dawley) rats. The growth enhancing effect, as well as the biochemical changes, were evaluated and compared with control animals.

Chronic massive doses of salbutamol can significantly induce hypertrophy of skeletal muscles concomitantly with an increase in percentage of type II muscle fiber as indicated in differential histochemical studies (ATPase and SDH staining). This hypertrophic effect is observed in muscles with a high percentage of type II muscle fiber (plantaris muscle). The degree of hypertrophy depends on the duration of salbutamol administration. A gradual regression was observed after cessation of the drug administration.

The influences of chronic salbutamol administration on the growth of animals, food consumption, cardiac muscle fiber and ATP concentration in skeletal muscle were not obvious, and the deviations from the control group were minimal and non-significant.

KEY WORDS: SALBUTAMOL/ATP MEASUREMENT/HISTOCHEMISTRY/HYPERTROPHY/MUSCLE FIBER TYPING

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