



## Study of the effect of aerobic exercise on cardiomyocyte apoptosis in male Wistar rats

### Poster Presentation

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### Abstract

**Introduction:** Impaired regulation of apoptosis creates conditions that can lead to various cardiovascular diseases. The aim of this study was to investigate the effect of aerobic exercise on the expression of cardiomyocyte apoptosis genes in male Wistar rats. The aim of this study was to investigate the effect of aerobic exercise on the expression of cardiomyocyte apoptotic genes in male Wistar rats.

**Methods:** In this experimental study, 24 male Wistar rats with average weight between  $190 \pm 10$  g were randomly divided into four groups (oxygenated water, oxygenated water + exercise, sham and control). After two weeks of familiarity with the environment and learning the exercises, training group, except sham and control, were given aerobic exercise for six weeks, oxidative pressure groups of 1 mM H<sub>2</sub>O<sub>2</sub>, it was injected sub peritoneum. 48 hours after the last training session, rats were anesthetized with CO<sub>2</sub> after 10-12 hours of fasting, and their heart tissue was isolated. To measure the expression of Apaf-1, cytochrome C and caspase 9 genes the Real Time PCR was used, for data analysis one-way analysis of variance, Scheffe post-Hoc test and SPSS version 23 were used ( $P \geq 0.05$ ).

**Results:** The findings showed that 6 weeks of aerobic training in water, reduced the genes of apoptotic internal pathway including Apaf-1, cytochrome C and caspase 9 at a significant level of  $P \geq 0.05$ .

**Conclusion:** According to the results of the present study, it seems that aerobic exercise in water reduces the adverse effects of cardiac tissue apoptosis, lower cell damage and ultimately the health of the body.

### Keywords

Apoptosis Cardio Myocytes Rats; Apaf-1; cytochrome c; Caspase 9

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