

## Effects of anaerobic exercise and detraining on the caspase-3 expression of rat ventricular cardiomyocyte

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### Abstrak

Anaerobic physical exercise is a high intensity physical exercise performed in a short time. This exercise can stimulate apoptosis in left ventricular cardiomyocytes after anaerobic exercise and detraining. Thirty two wistar rats *ratus norvegicus* 250-350 grams (8-10 weeks old) were divided into the following groups (n=4) and given anaerobic physical exercise four and 12 weeks (group Exc-4, Exc-12-D). The control groups were only observed in the same period (group CTL-4, CTL-12, CTL-4-D, CTL-12-D). At the end of observation, the rats were sacrificed and examination of the expression of caspase-3 as an indicator of apoptosis was done using immunohistochemical staining. Data were analyzed with ANOVA test. An increase in expression of caspase-3 in the group Exc-4 (72.03%) compared to the CTL-4 (27.22%), ( $P < 0,001$ ); AND Exc-12 (79.30%) compared to the CTL-12 (30.53%) ( $p = 0.027$ ). Detraining process showed a significant decline caspase-3 expression (31.12% in exc-4-D and 30.44% in the exc-12-D) Anaerobic physical exercise can increase apoptosis in rat left ventricle cardiomyocyte characterized by increase expression of caspase-3. Detraining can improve heart condition characterized by decreased expression of caspase-3