

عنوان مقاله:

The effect of eight weeks of moderate-intensity endurance training on serum levels of troponin I and B-type natriuretic peptide in radiotherapy rats

محل انتشار:

مجله دانشگاه علوم پزشکی شهرکرد, دوره 25, شماره 4 (سال: 1402)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

Background and aims: One of the most important potential problems of radiotherapy is the heart problem caused by this treatment. Therefore, this research aimed to investigate the effect of 8 weeks of moderate-intensity endurance training on the serum levels of troponin I (TNI) and brain (B-type) natriuretic peptide (BNP) in rats undergoing radiation therapy.] **Methods:** In this experimental study, 32 male rats (4-6 months) were randomly divided into four groups of eight, including healthy control (C), aerobic training (AT), radiotherapy (RT), and AT+RT groups. First, rats were anesthetized with ketamine-xylazine solution (K: 60-90 kg/mg, Z: 6-10 kg/mg) and then located on a Plexiglas plate with a thickness of 1 cm. Photon beam RT was performed using X-rays with a dose of 11 Gy from an Elekta compact linear accelerator (Elekta Compact 6-MV China). AT program was performed for eight weeks, five days a week, and one session a day for 60 minutes (70-75% of maximal oxygen consumption). Finally, one-way ANOVA was run to examine the research variables. **Results:** The results showed that there was no significant difference between the groups in terms of the TNI level ($P=0.23$). However, a significant difference was found in the amount of BNP between the RT and C groups ($P=0.009$). In addition, no significant difference was reported in terms of BNP between AT+RT with AT ($P=0.99$), RT ($P=0.32$), and C ($P=0.69$) groups, as well as between AT with RT ($P=0.1$) and C ($P=0.99$) groups. **Conclusion:** Overall, radiation therapy caused a significant increase in BNP, but it had no significant effect on TNI. Aerobic training did not significantly affect TNI and BNP in healthy rats and those undergoing radiation therapy

کلمات کلیدی:

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