Effect of regular aerobic exercise on oxidative damage markers of lipids and proteins in rats exposed to radiation emitted by Wi-Fi router

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Abstract

Background & Aim*:* Electronic and communication devices have largely become a part of our daily lives. And this has caused a growing concern with regards to the possible side-effects of exposure to the radiation of these devices on human health. To investigate the same, a research was undergone to study the "Effect of regular aerobic exercise on oxidative damage markers of lipids and proteins caused by exposure to radiation emitted from Wi-Fi routers"

Methods**:** 12 Wistar rats were randomly divided into two groups of radiation and radiation+exercise. Interventions included exposure to radiation emitted from the Wi-Fi modem and running at 40 to 60 percent of their maximum speed for 8 weeks. Blood samples were taken 48 hours after intervention. Plasma levels of malondialdehyde (oxidative lipid injury index) and carbonyl protein (oxidative-protein damage index) were measured and data were analyzed at $P \leq 0.05$.

Results**:** According to Independent-Sample T test, there was a significant difference between radiation and radiation+exercise groups. Eight weeks of exposure to radiation caused an increase in plasma levels of PCA and MDA. On the other hand, eight weeks of aerobic exercise decreased the PC and MDA levels.

Conclusion**:** It seems that regular aerobic exercise can reduce the oxidative damage caused by Wi-Fi radiation in lipids and proteins.

Keywords**:** oxidative damage, carbonyl protein, malondialdehyde, Wi-Fi, electromagnetic radiation