Original Paper

Effect of cell phones microwaves on histologic structures of some visceral organs in rat

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Abstract

Background and Objective: The electromagnetic field producer sets in daily life causes concerns about the adverse effects of such waves on human health. This study was done to evaluate the effect of cell phones microwaves on histologic structures of some visceral organs in rat.

Methods: In this experimental study, 80 immature Wistar male rats with weight of 100-140 gram and 5 to 6 weeks age were randomly allocated into 3 experimental groups and one control group. The experimental rats were exposed to cell phones microwaves 5 hours a day for 1, 2 and 3 months. The control group received no radiation. After the experimental period rats were sacrificed and the appropriate tissues of the lung, heart, liver, brain and pancreas were prepared. Sections in 5 μm thicknesses were stained by hematoxylin and eosin and studied microscopically.

Results: Histological changes including edema, inflammatory cell infiltration and cell degeneration in the lung and mild degeneration and coagulation necrosis of the myocardial cells in the heart were observed. Histopthological examination of the liver revealed dilation of central veins and sinusoids, vacuolization of hepatocytes and mononuclear inflammatory cell infiltration. Limited changes were observed in pancreas and brain. Histological changes were increased in the groups that were exposed longer period of time to radiation.

Conclusion: This study indicated that the harmful effect of cell phones radiation on rat tissues depending on the duration of exposure.

Keywords: Microwaves radiation, Cell phone, Liver, Lung, Brain, Pancreas, Rat

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