

Original Paper

Effects of low density electromegnetic on heart tissue of male Rat

Khaki A (PhD)¹, Behrouz M (DVM)*²

¹Associate Professor, Department of Veterinary Pathology, Islamic Azad University Tabriz Branch, Tabriz, Iran.

²Graduat of Veterinary Medicine, Veterinary Medicine Scientific Association Member, Islamic Azad University Tabriz Branch, Tabriz, Iran.

Abstract

Background and Objective: The modern life condition has caused the human to be exposed to electromegnetic fields. Epidemiologic and animal laboratory studies have illustrated the adverse effects of electromegnetic fields on biologic systems. The aim of study was to assess the effects of low density electromegnetic on heart tissue of male rat.

Materials and Methods: In this experimental study 30 Wistar rats with weight of 10-150 gram and 5weeks age were used. Rats were allocated randomly in two aqual groups: case and control. Experimenal group rats were exposed to the electromegnetic field 8 hours a day for 2 months (50 HZ, 1 mili Tesla). After 2months the rats were sacrificed, the heart tissues were removed and stained by H&E method.

Results: There was not any altherations in cells and tissue of control groups. In experimental group there was a sever disruptions on heart tissue, polymorphysm of cardiac myocyte nuclues with same hollow spaced in perinucluar, nuclear cytoplasm and fibrotic tissue. Also, the number and size of cells in case group were reduced. Cagulated necrosis and vacolization of cytoplasm of cardiac myocyte was observed in case group.

Conclusion: This study showed that low density of electromegnetic Fields for two months durtion can cause pathological changes in cells and heart tissue of male rats.

Keywords: Electromegnetic Fields, Heart, Rat, Coagulated Necrosis, Fibrous

* **Corresponding Author: Behrouz M (DVM), E-mail: moein_vet@yahoo.com**

Received 9 Aug 2011

Revised 18 Oct 2011

Accepted 2 Jan 2012