Hatice Ozlem Nisbet, J Veterinar Sci Techno 2016, 7:5(Suppl)
http://dx.doi.org/10.4172/2157-7579.C1.016

The influence of 900 to 1800 Mhz electromagnetic field on testicular function and structure of growing rats

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The purpose of this study was to evaluate the possible effects of whole body electromagnetic field (EMF) exposure on reproduction in growing male rats. Male albino Wistar rats (2 days old) were exposed to EMF 1800 and 900 MHz for 2 hours continuously per day for 90 days. Sham control was kept under similar conditions except that the field was not applied for the same period. After blood samples were collected, the animals were sacrificed 24 hours after the last exposure and the tissues of interest were harvested. The mean plasma total testosterone showed similarity among the two study groups and was significantly higher than the sham control rats. The percentage of epididymal sperm motility was significantly higher in the 1800 MHz group ($p<0.05$). The morphologically normal spermatozoa rates were higher and the tail abnormality and total percentage abnormalities were lower in the 900 MHz group ($p<0.05$). Histopathologic parameters in the 1800 MHz group were significantly higher ($p<0.05$). In conclusion, the present study indicated that exposure to electromagnetic wave caused an increase in testosterone level, epididymal sperm motility (forward) and normal sperm morphology of rats. As consequences, 1800 and 900 MHz EMF could be considered to be a cause of precocious puberty in growing rats.

Biography

Hatice Ozlem Nisbet has received her DVM from Uludag University, Faculty of Veterinary Medicine in 1990 and PhD at Faculty of Veterinary Medicine, Department of Surgery of Uludag University in 1997. She is a Researcher and Lecturer in Ondokuz Mayis University, Faculty of Veterinary Medicine, Department of Surgery, Turkey. She has authored/co-authored over 35 articles in scientific journals.

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