Title of Article: Short-duration exposure to 2.45 GHz microwave radiation induces DNA damage in Sprague Dawley rat's reproductive systems.

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Abstract

The genotoxic effects of 2.45 GHz microwave (MW) radiation on the testis and ovary of Sprague Dawley rats was investigated. The animals were exposed to varying levels of specific absorption rate (SAR) of 0 (control), 0.48, 0.95, 1.43, 1.91, 2.39, 2.90, 3.40, 3.80 and 4.30 Wkg-1, for 10 min. The induction of DNA damages was assessed using DNA direct amplification of length polymorphisms (DALP) and validated with single cell gel electrophoresis (SCGE) comet assay for same cells at SAR 2.39 Wkg-1. Potential damage at the organ level was assessed by histopathological study. The results show significant differences in the Olive moment and % DNA in the blood of the exposed animals when compared with the control ($p < 0.05$). Hyperchromasia was observed in the ovary of the animals exposed to MW radiation. Also, there was reduction in the number of germ cells and cell disorganization in the testis of exposed group with increasing SARs. These results suggest that MW radiation has the potential to affect both male and female fertility adversely.