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Impact of radiofrequency radiation on DNA damage and lipid peroxidation in males residing in the vicinity of mobile phone base stations**Ramanpreet and Gursatej Gandhi**
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Statement of the Problem: Mobile phone base stations continuously emit low-frequency radiofrequency (RF) radiations and thus are a cause of public health concern.

Methodology: In the present study, blood samples of males residing in the vicinity of a mobile phone base station (n=31; average age, 43.64±2.83 years; average stay of 8.54±0.25 years, range 3-9 years) and unexposed healthy controls from areas with no nearby towers (n=14; average age 55.07±3.95 years) were assessed for genetic damage as well as lipid peroxidation levels (malondialdehyde levels) after approval of the study by institutional ethics committee under a voluntary informed consent. The study groups matched for various demographic data including sex, smoking habit, alcohol consumption and socio-economic status. The RF power density of the exposed males was significantly higher ($p<0.0001$) when compared to the control group.

Results: Genetic damage assessed by single cell gel electrophoresis assay revealed a highly significant increase in damage index ($p=0.001$), damage frequency ($p=0.004$) and percent DNA in tail ($p=0.006$) was observed in sample group compared to control group. Lipid peroxidation (malondialdehyde levels) determined spectrophotometrically was also significantly ($p=0.003$) elevated in exposed males as compared to control group probably as a function of radiofrequency radiation in the absence of other exposure.

Conclusion: Specific absorbance rate values were significant predictors of genetic damage and oxidative stress in exposed males. Hence, the observations indicate that 24x7 continuous RF exposure from base stations increased genetic damage and oxidative stress in males residing in the vicinity of mobile phone base stations.

Biography

Ramanpreet is working on ill health effects of mobile phone radiations as Project Fellow under the supervision of Dr. Gursatej Gandhi, which is a part of her MSc dissertation thesis.

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