

Effect of radiofrequency electromagnetic field exposure on hematological parameters of mice

ABSTRACT

Radio frequency electromagnetic field (RF EMF) exposures due to Global System for Mobile communication (GSM) window frequencies were investigated in this study. 158 Swiss Albino mice in unrestrained conditions were used as surrogate and divided into four groups. The average field strength generated and measured inside the cages placed at a far field from the antennas was 6mW/m and the specific 2 absorption rate was 0.3W/kg. Three samples of the exposed mice chosen at random at the end of exposure after 4 weeks and subsequently on biweekly basis were taken for haematology and histopathology tests. The complete blood count result shows that haematological parameters of both the sham exposed and exposed mice were within the normal range of mice in the control group. The mean values of haematological parameters were found to be significant with prolong exposure. The histopathology examinations on bone marrow of the mice were normal for all the three experimental groups. Observation of individual and collective behaviour of the mice shows some manifestation in the form of aggressiveness and hyperactivity. In contrast, these signs were not so apparent in the mice in sham exposed group.

Keyword: Radio frequency (RF); Haematology; Base station (BS); Global system for mobile communication (GSM)