

Effects of mobile phone radiation on serum level of cortisol and anxiety in animals

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Background

Widespread use of cell phones is the most important risk factor of animal health in the age of technology. The aim of this study was to investigate the effects of mobile phone radiation on serum level of cortisol and changes in anxiety level in male rats.

Methods

In this laboratory-experimental study, the male Wistar rats were divided into control and exposed to cell phone radiation for 1h, 3h, and 6h/day, groups. After 8 weeks, Elevated Plus Maze was used for anxiety evaluation. Blood samples also were obtained using cardiac puncture method and after serum preparation, levels of cortisol were measured using ELFA method. The data were statistically analyzed using SPSS software version 19.

Results

The results indicated that serum level of cortisol significantly increased in rats exposed to cell phone radiation for 6h/day compare to control animals ($P < 0.05$). Also the results of the elevated plus maze test showed that the percentage of time spent in open arms significantly decreased in all experimental groups compared with control rats ($P < 0.001$). There was also significant decrease in the percentage of entries into open arms in all experimental groups compared to control group ($P < 0.001$).

Conclusion

The findings of this study showed that the exposure to cell phone radiation results in enhanced anxiety level accompanied by increased serum level of cortisol.