

Electromagnetic fields, hormonal changes, and offspring sex ratio

To the Editor

I have read with great interest the article of Ozguner et al.¹ The authors reported the biological and morphological effects resulting from 900 MHz radiofrequency electromagnetic field (EMF) on the reproductive organ of adult male Sprague-Dawley rats. They reported that there was a significant decrease in serum total testosterone level, and an insignificant decrease in plasma leuteinizing hormone (LH) and follicle stimulating hormone (FSH) levels in the EMF group compared to the control group.¹ Based on the published papers, there are few studies that have shown a change of offspring sex ratio in human and experimental animals, due to parental exposure to EMF,^{2,3} but, the others does not.⁴⁻⁶ It is hypothesized that the offspring sex ratio in mammals, including humans, is associated with the hormone concentrations of their parents at the time of conception.⁷ The sexes of mammalian offspring are causally associated with the level of R where R is a function of the form:⁷ $(E+T)/(G+P)$. Here, E, T, G, and P are parents' sex standardized levels of estrogen, testosterone, gonadotrophins, and progesterone. High and low levels of R (in either parent) are associated with increase and decrease of sex ratio in offspring.⁷ Although Ozguner et al¹ reported alteration in serum testosterone levels in the EMF group, there is no data on the ratios of testosterone to either LH or FSH levels in exposed and unexposed groups. Unfortunately, it is impossible to estimate the ratios based on the data

presented in the Ozguner et al¹ article. So, it would be interesting to know whether EMF altered the above-mentioned ratios.

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Reply from the Author

No reply received from the Author.

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Erratum

In Authors Index of Saudi Medical Journal Vol. 25 July - December 2004, the author's name and page numbers should have appeared as follow: Al-Ghamdi, AM 862, 1299, 1509, 1871.