

عنوان مقاله:

Effects of prenatal exposure to extremely low electro-magnetic field on in vivo derived blastocysts of mice

محل انتشار:

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خلاصه مقاله:

Background: Indisputable population exposure to widespread electromagnetic fields, has grown concerns over the probable health effects of these fields. Objective: The present study was aimed to examine the possible effects of 50 Hz extremely low frequency electromagnetic field (ELF-EMF) exposure on the number and quality of mice blastocysts. Materials and Methods: In present study, 66 NMRI pregnant females divided into two treated and non-treated groups. The treated group exposed to ELF-EMF (50 Hz and 6×10^{-3} T). Subsequently, embryos were collected by flushing the uterine horn and Fallopian tubes on the day 3 of gestation. Number of trophoectoderm (TE) and Inner Cell Mass (ICM) cells in blastocysts were determined after differential nuclei staining using a modified method. Furthermore, number of all flushed blastocysts calculated in each group. Results: There was no significant difference in mean number of blastocysts in treated (6.64 ± 1.34) and none treated (8.22 ± 1.59) groups. In treated group, there were significant decreased in total cell number of blastocysts ($p=0.000$), number of ICM cells ($p=0.000$), and number of TE cells ($p=0.001$) whereas the ratio of ICM/TE cells increased ($p=0.002$). Conclusion: The data indicate that ELF-EMF is able to affect cellular composition of blastocysts, but it can't omit total volume of blastocysts

کلمات کلیدی:

Blastocyst, Electromagnetic fields, Mice

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