

Effect of low electromagnetic fields on fetal death and bone marrow megakaryocytes in NMRI mouse neonates

Parvin Dokht Bayat (PhD)*¹, Mohammad Reza Darabi (PhD)¹

¹Assistant Professor, Department of Anatomy, Arak University of Medical Sciences, Sardasht, Iran.

Abstract

Background and Objective: Low electromagnetic fields (LEMF) are produced by instruments which are works with electricity. This study was done to determine the effect of LEMF on fetal death and bone marrow megakaryocytes in NMRI mouse neonates.

Materials and Methods: In this experimental study 64 females' mice with 6-8 old weeks were used. 2 female mice coupled with one male, and positive vaginal plaque was interpreted as the zero day of pregnancy (GD=0). The pregnant mice were randomly categorized into control and experimental groups. The experimental group were exposed to 50HZ, 0.5 mT Low electromagnetic fields on 7-11 days of pregnant period (8h/d). The weight of neonate and death fetus were studied after delivery. The live neonates were dissected on 15th day, and 1 ml of bone marrow was extracted from Tibia and vertebral column, by pressing method. The bone marrow cells suspended in 1:1 IMDM in 15cc (FULCON) tubule and cells was counted with neobar lam. The data were tested by t-student test; significance was set up at $p < 0.05$.

Results: There was significant differences between the mean weight of one day neonate in cases with controls ($P < 0.05$). The mean of dead fetus in experimental group was higher than controls ($P < 0.05$). The mean of megakaryocytes numbers higher than controls, but this differences was not significant.

Conclusion: This study showed that the number of megakaryocytes and fetal death were increased by low electromagnetic fields exposure during pregnancy.

Keywords: Low electromagnetic fields, Megakaryocytes, Bone marrow, Dead fetus, Mouse

* Corresponding Author: Parvin Dokht Bayat (PhD), E-mail: bayatanat@yahoo.com.au

Received 27 Jan 2009

Revised 29 Jul 2009

Accepted 1 Aug 2009