

Solid Ehrlich tumor growth treatment by magnetic waves

Ali FM, El Gebaly RH, El Hag MA and Rohaim AM

Abstract

In this work the retardation of Ehrlich tumor growth implanted in mice was studied by employing 4.5 Hz magnetic field. Eighty female Balb/c mice were used, twenty as normal group; the other sixty mice were inoculated with Ehrlich tumor, then they were divided equally into three groups namely A, B and C. Group A (control group) animals were not exposed to the magnetic field. The tumors in the thigh of the animals of group B were exposed to 4.5 Hz, 2 Gauss square wave magnetic field by using a small solenoid connected to a power square wave generator. Group C animals were whole body exposed inside a large solenoid to 4.5 Hz, 2 Gauss square wave magnetic field. Both groups B and C were exposed for a period of 2 weeks at a rate 2 hours per day. Tumor volume, survival period, histological examination and dielectric relaxation of the tumor were measured to investigate the activity of the tumor of the exposed and the unexposed animals. The results indicated that exposing the tumor tissue to 4.5 Hz square wave magnetic field for 2 weeks at a rate 2 hours/day inhibited tumor growth and increased the survival period of the animals. However, group B showed more improvements than did group C. This was attributed to some distortions in the square waveform in the large solenoid (group C). By comparing data from current and previous work, it was concluded that the use of magnetic waves showed better results over previously published work using amplitude modulated electromagnetic waves with the same frequency.

Published In: Technol Health Care. 2011;19(6):455-67