

EFFECT OF MOBILE PHONE STATION ON MICRONUCLEUS FREQUENCY AND CHROMOSOMAL ABERRATIONS IN HUMAN BLOOD CELLS

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Summary: *Effect of mobile phone station on micronucleus frequency and chromosomal aberrations in human blood cells:* The use of mobile telephones has rapidly increased worldwide as well as the number of mobile phone base stations that lead to rise low level radiofrequency emissions which may in turn have possible harm for human health. The national radiation protection board has published the known effects of radio waves exposure on humans living close to mobile phone base stations. However, several studies have claimed that the base station has detrimental effects on different tissues. In this study, we aimed to evaluate the effects of mobile phone base stations on the micronucleus (MN) frequency and chromosomal aberrations on blood in people who were living around mobile phone base stations and healthy controls. Frequency of MN and chromosomal aberrations in study and control groups was 8.96 ± 3.51 and 6.97 ± 1.52 (p: 0.16); 0.36 ± 0.31 and 0.75 ± 0.61 (p: 0.07), respectively. Our results show that there was not a significant difference of MN frequency and chromosomal aberrations between the two study groups. The results claim that cellular phones and their base stations do not produce important carcinogenic changes.

Key-words: Public health – Micronucleus – Chromosome – Base station – Genotoxicity.

INTRODUCTION

The use of mobile telephones has increased rapidly worldwide, together with the number of base stations leading to a rise in low level radiofrequency emissions (3)(RF). A handset typically radiates between 1 and 2 W while a base station antenna spreads 60 W. A base station produces a beam that is much more unidirectional whereas a handset radiates equally in all directions (8). So, the population is exposed to low level radiofrequency depending on the distance from the base station. Although the effects of radiofrequency emissions on healthy human cells are not clear, chronic exposure to low level radiofrequency spreading from a base station may include the possibility of initiation and promotion of carcinogenesis and the induction of genetic damage (18). Exposure to low level radiofrequency emissions is likely to continue and the possibility of harmful affection may increase in the near future, such as possible genotoxic effects on somatic cells which cause cancer initiation (6).

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