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Abstract
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Electromagnetic energy radiated from mobile phone alters electrocardiographic records of patients with ischemic heart disease.

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Source

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Abstract

BACKGROUND:

Electromagnetic energy radiated from mobile phones did not show significant effect on the blood pressure, heart rate, and electrocardiographic (ECG) parameters in animals and humans.

AIM:

This study aimed to investigate the effect of radiofrequency of mobile phone on the electrocardiographic parameters in patients with history of ischemic heart disease, taking into consideration the gender factor.

SUBJECTS AND METHODS:

A total number of 356 participants (129 males and 227 females) were admitted in this study. They were grouped into: subjects without cardiac diseases (Group I), patients with ischemic heart disease (Group II), and patients with history of cardiac diseases not related to myocardial ischemia (Group III). Electrocardiogram was obtained from each patient when the mobile phone was placed at the belt level and over precordium in turn-off mode (baseline) and turn-on mode for 40 sec ringing. The records of ECG were electronically analyzed.

RESULTS:

Prolongation of QTc interval was significantly observed in male gender of Groups I and III ($P < 0.001$). Male patients of Group II showed significant QTc interval prolongation ($P = 0.01$) and changes in the voltage criteria ($P = 0.001$). These changes were not observed in female patients with ischemic heart disease. The position of mobile at the belt level or over the precordium showed effects on the heart.

CONCLUSIONS:

The radiofrequency of cell phone prolongs the QT interval in human beings and it interferes with voltage criteria of ECG records in male patients with myocardial ischemia.

KEYWORDS:

Africa, electrocardiogram, ischemic heart disease, mobile phone

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