Abstract

Goals: Increasing contact with magnetic and electromagnetic fields is inevitable. The purpose of this study was to evaluate the effects of MRI on indexes of ECG and vital signs of patients.

Methods: This analytical study was carried out in 55 on 48 people that referring to the MRI Center of the 5th Bahman Hospital in Gonabad city. They were between 51-01 years old and with at least one previous MRI. The MRI examinations were 1-3 minutes. The sampling method was available. ECG and vital signs (temperature, pulse, blood pressure and respiration) were measured before and after MRI. The MRI machine was Neusoft made in China with the power of 1.5 Tesla. Data was analyzed by SPSS software (version 19) and using Wilcoxon and paired t-test. The level of significance was considered less than 0.05.

Results: The results showed that systolic blood pressure before MRI was 121.9±1.9 and then was 120.8±1.8, diastolic blood pressure before MRI was 87.3±1.8 and then was 87.4±1.8 and arterial blood pressure before MRI was 103.1±1.8 and then was 103.8±1.8 mmHg (p<0.01). Heart rate before MRI was 77.8±1.8 and then was 78.9±1.8 per minute, respiratory rate before MRI was 14±1.8 and then was 14±1.8 per minute and QT interval before the MRI was 41.3±1.8 and then was 41.9±1.8 mm/s (p<0.01). The duration of the QRS before MRI was 0.34±1.8 and then was 0.34±1.8 mm/s (p=0.04). PR interval before MRI was 8.3±1.8 and then was 8.3±1.8 mm/s (p=0.04). Conclusion: MRI with the power of 1.5 Tesla can decrease the systolic, diastolic and mean arterial blood pressure, heart rate and respiratory rate and increase the QT interval. However, indexes of temperature, length of wave P, QRS and PR intervals is ineffective. Keywords: MRI, ECG, vital signs