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Title:	**Influence of Energy Drinks on Different Cardiovascular Parameters of Healthy Adults: A Pilot Study**
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Influence of Energy Drinks on Different Cardiovascular Parameters of Healthy Young Adults: A Pilot Study

Abstract

Background: Energy drink (ED) intake is associated with acute changes in cardiovascular indices. However, the amplitude of electrocardiographic (ECG) waves have been scarcely studied and gender difference has not been explored either. The current study aims to observe changes in ECG under the influence of ED with focusing on gender differences.

Methods: Twenty healthy participants with an average age of 22 years were enrolled in this study. Half of the participants were males and half were female. This study was conducted in the Department of Physiology, University of Karachi from July 2019 to October 2019. The participants were asked to drink 500 ml of ED. Later limb lead ECG was performed before (Before-ED) and 2 hours after (After-ED) intake. Recording and data analysis was done through Power lab. Heart rate (HR) corrected QT interval (QTc), R wave, and T wave amplitudes and HR were calculated and analyzed.

Results: QTc was found to increase (10%) in After-ED as compared to Before-ED. In contrast, T wave was found to reduce (37%) in After-ED. These results were statistically significant (p < 0.05). These changes in QTc and T waves were similar in both male and female subjects. The HR did not change in males. In females, it increased from an average of 82 bpm in Before-ED to 92 bpm in After-ED and the difference was statistically significant (p < 0.05).

Conclusion: Acute intake of energy drinks produces acute changes in ECG with no gender difference. Thus, regular intake of these drinks should be avoided.

Keywords: cardiovascular health, corrected QT interval, electrocardiography (ECG), energy drink (ED), heart rate (HR)