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Original Article

Physiology Section

QTc Changes in Non-pregnant Females with Severe iron Deficiency Anaemia

VITTHAL H. KHODE, K.F. KAMMAR

ABSTRACT

Background: A prolonged QT interval is a biomarker for ventricular tachyarrhythmias and a risk factor for sudden death. It is associated with a faulty storage of excess iron in the myocardium, which is described in several hereditary and acquired conditions. However, we do not have enough evidence on the fact that iron deficiency can affect the QT interval. We hypothesized that iron plays an important role in the generation and the propagation of electrical impulses at the level of the myocardial membrane and that it alters the QT interval; so we recorded the QT interval in severely anaemic, non-pregnant females and compared it with that in age and sex matched controls.

Methods: 30 non-pregnant females with severe iron deficiency anaemia, Haemoglobin- <6gm% and low serum ferritin levels were subjected to the ECG test. The QTc of each subject was calculated by using Bazzet's formula and this was compared with that of an equal number of sex and age matched controls.

Results: A significantly shortened QTc was observed in severe iron deficiency anaemia (SIDA) (390±23ms) as compared to that in the controls (419±19ms) (P>0.001). There was a significant positive correlation between the serum ferritin levels and the QTc interval.

Conclusion: A shortened QTc was observed in the SIDA group because of the sympathetic over activity which was secondary to the hyper dynamic circulation.

Key Words: QTc interval, Severe iron deficiency anaemia, Non-pregnant females