

Editorial

PQ-Interval and QT-Interval in Single ECG Tracing

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Received: December 03, 2013; Accepted: January 25, 2014; Published: January 27, 2014

We presented a clinical condition characterized by the presence of a short PQ interval and a short QT interval in the same individual with known variants. The Short PQ syndrome is characterized by a duration <0, 12 seconds. Similar cases have been reported with short QT syndrome during 2000-03. In this manuscript we present a patient who is also reported with short QT duration of approximately < 0.350 second.

Both clinical conditions are reported in the same individual. However, there is an electrocardiographic pattern that is very little known today that is a pattern with short "PQ-interval and QT-interval" in single ECG tracing.

The QT interval is an indication of ventricular repolarization [1-3]. The upper normal limits of QT interval are well known, and its prolongation is higher than these limits and thus it is considered to be an independent risk factor for an unexpected death. There are many information available on syndromes congenital and acquired long QT and its connection to mortality [3-4]. The contrasting factor is that, very little information is known about the causes and prognostic value of Short QT interval [5-7]. Thus it is very complicated to understand the key factor behind this syndrome. Patients with short QT syndrome have an extensive clinical complication including palpitations, tachycardia, and occurrence of syncope and sudden cardiac death, with a family history of it carrying through several generations [5-7]. We have demonstrated in our previous work about the presence of this pattern in several patients with symptoms of childhood convulsions - diagnosed as epilepsy despite not display any epileptic focus on studies of electroencephalography (EEF) - as well as nocturnal tachycardia crisis and syncope events related to repetitive physical effort.

Electrical cardiac systole: Electrical cardiac systole comprises Atrial depolarization (P wave), PQ- interval, Ventricular depolarization (QRS complex), ST Segment, and Ventricular repolarization (T wave). In many cases, the determination of the end of the T wave is very intricate to calculate. The presence of this configuration with rapid shortening of intervals PQ and QT signify a major cardiac instability, and consequently result in a high risk for serious cardiac arrhythmias (ventricular fibrillation fundamentally) and therefore might also cause sudden cardiac death [5].

Raising awareness among the doctors about QT interval and its related complications is prescriptive. Avoiding the preventable sudden deaths is the duty of all doctor(s), thus knowledge of this typical electrocardiogram beside clinical features of the patient should be known and carefully assessed.

References

1. Cowan JC, Yusoff K, Moore M, Amos PA, Gold AE, Bourke JP, et al. Importance of lead selection in QT interval measurement. *Am J Cardiol.* 1988; 61: 83-87.
2. Zabel M, Franz MR, Klingenhoben T, Mansion B, Schultheiss HP, Hohnloser SH. Rate-dependence of QT dispersion and the QT interval: comparison of atrial pacing and exercise testing. *J Am Coll Cardiol.* 2000; 36: 1654-1658.
3. Glancy JM, Garratt CJ, Woods KL, De Bono DP. Three-lead measurement of QTc dispersion. *J Cardiovasc Electrophysiol.* 1995; 6: 987-992.
4. Behrens S, Li C, Knollmann BC, Franz MR. Dispersion of ventricular repolarization in the voltage domain. *Pacing Clin Electrophysiol.* 1998; 21: 100-107.
5. de Bruyne MC, Hoes AW, Kors JA, Hofman A, van Bommel JH, Grobbee DE. QTc dispersion predicts cardiac mortality in the elderly: the Rotterdam Study. *Circulation.* 1998; 97: 467-472.
6. Gussak I, Brugada P, Brugada J, Wright RS, Kopecky SL, Chaitman BR, et al. Idiopathic short QT interval: a new clinical syndrome? *Cardiology.* 2000; 94: 99-102.
7. Gaita F, Giustetto C, Bianchi F, Wolpert C, Schimpf R, Riccardi R, et al. Short QT Syndrome: a familial cause of sudden death. *Circulation.* 2003; 108: 965-970.