

Letter to the Editor

Quantitative assessment of cardiac electrical heterogeneity in patients with polycystic ovary syndrome by transmural dispersion of repolarization and atrial electromechanical coupling

Dear Editor,

We read the article entitled "Two markers in predicting the cardiovascular events in patients with polycystic ovary syndrome: increased P-wave and QT dispersion" by Akdag et al¹ with great interest. In this well designed research, they reported that Pd and QTd were increased in the PCOS patients.

QTd is one of the most frequently used non-invasive methods to reveal the ventricular repolarization abnormalities and ventricular inhomogeneity of the myocardium. However, reproducibility of QT interval measurements is low both in manual and automatic measurements and inter- and intra-observer variability of QTd is very high². Quantifying the inhomogeneity of the myocardium, transmural dispersion of repolarization (TDR) has also been used for different clinical conditions. Midmyocardial M cells have typically the longest repolarization phase. Repolarization phase of the midmyocardial M cells continues until the end of the T wave. However, repolarization phase of the epicardial cells ends at the peak of the T wave. The time between the peak and end of the T wave is entitled as Tp-e interval, as an index of TDR³.

On the other hand, the basic electrophysiological characteristics of atrium that is prone to atrial arrhythmias is the prolongation of intra- and inter-atrial conduction times and heterogeneous propagation of sinus impulses. Pd is an accepted marker of atrial depolarization heterogeneity and altered propagation of sinus impulses. Although prolonged Pd values were found to be correlated with atrial fibrillation, it is controversial whether Pd is related with heterogeneity of atrial conduction or with other factors such as body mass index⁴. Furthermore, reproducibility of P-wave measurements is low both in manual and automatic measurements and inter- and intra-observer variability is very high. Atrial electromechanical coupling (AEC) can be assessed by ECG integrated tissue Doppler imaging (TDI) and provide the means to determine the atrial mechanical and electrical event. Analysis of AEC by TDI allows precise analysis of AEC between different regions. Moreover, measurement of AEC may suggest an inhomogeneous propagation of sinus impulses in different cardiac sites.

Thus, considering all the data about Pd, AEC, QTd and TDR, the study might have completely revealed the effects of PCOS on electrical heterogeneity of the myocardium in many respects.

Conflict of Interest

The Authors declare that they have no conflict of interests.

References

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