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P-wave dispersion measurement: Methodological considerations



ABSTRACT

Keywords:

P-wave dispersion
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Well-known difficulties in defining P-wave onset and offset may restrict the accuracy and reproducibility of P-wave dispersion measurements. To achieve greater precision in measuring P-wave dispersion, simultaneous digital recording of all 12 ECG leads and onscreen measurement of P wave characteristics is mandatory to examine atrial fibrillation risk.

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To the Editor:

With great interest, we have read the important review of Pérez-Riera et al. [1] on P-wave dispersion and its various clinical applications. Although widespread use of this electrocardiographic (ECG) index is reported, the methodology for its measurement is not standardized. The first attempt to calculate a “P-wave dispersion index” was reported by Buxton and Josephson [2]. They introduced the iso-electric interval, which was derived by subtracting the longest P-wave duration in the standard limb lead from the total P-wave duration, measured from the earliest onset to the latest end of the P wave in any of the simultaneously recorded leads I, II, and III [2]. Our research group has introduced P-wave dispersion as a simple ECG predictor of paroxysmal lone atrial fibrillation (AF) [3]. Although acceptable intraobserver and interobserver error in the measurement of P-wave duration on 12-lead electrocardiography have been reported [3], well-known difficulties in defining P-wave onset and offset may restrict the accuracy and reproducibility of the measurements. To overcome some of these restrictions, averaging techniques used in advanced recording devices and magnified graticules on standard computer screens have proved useful in the accurate evaluation of P-wave dispersion [4]. In any case, simultaneous recording of all 12 ECG leads is mandatory to reduce the time-related well-known lability of P-wave features. The lability of P-wave characteristics as well as their circadian behavior may also induce possible imprecision in measurements [5]. To achieve greater precision in measuring P-wave dispersion, we believe that simultaneous digital recording of all 12 ECG leads and onscreen measurement of P wave characteristics is mandatory to examine AF risk.

Conflict of interest

The authors have no potential conflict of interest to declare.

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Polychronis Dilaveris*, Dimitris Tousoulis

From the 1st Department of Cardiology, Medical School, National and Kapodistrian University of Athens, Hippokraton Hospital, Athens, Greece

* Corresponding author. 22 Miltiadou Street, 155 61 Holargos, Athens, Greece.

E-mail address: hrodil1@yahoo.com (P. Dilaveris).

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