Letter by Madias Regarding the Article, “Repolarization Alternans Reveals Vulnerability to Human Atrial fibrillation”

To the Editor:

The important article by Narayan at al, published on June 28, 2011 in Circulation,1 extends the arrhythmia prognostic testing application of electric alternans from the ventricular to the atrial cardiac repolarization. The authors measured in the setting of an electrophysiology study of a total of 33 patients with a history of paroxysmal, or persistent atrial fibrillation (AF), or no such history, the action potential duration (APD) in the left atrium (in all patients) and in the right atrium (some patients) during pacing at heart rates from 100 to 120 milliseconds, up to the point of emergence of AF. The main findings were as follows: (1) a progressively faster pacing rate for the generation of AF was noted in patients with persistent AF, paroxysmal AF, and no such history; (2) APD alternans was found in patients with AF even at rest or low pacing rates; (3) APD alternans preceded emergence of AF; (4) APD alternans was not seen in patients with no history of AF; (5) APD alternans occurred at lower pacing rates and/or larger magnitudes in patients with persistent AF than in patients with paroxysmal AF. It is clear that the authors have described a continuum in this cohort, from the patients with no history of AF, to those of paroxysmal AF, and those with persistent AF. Was there a parallel noted in the electrocardiographic measurements of the P-wave indices in these patients? I am sure that these 33 patients had at least 1 standard ECG, and most contemporary and ECG recording and management systems use measurements of amplitude and duration of the P waves from all 12 ECG leads.

Magnani et al2 reported that in the Framingham Heart Study the maximum P-wave duration, but not the P-wave dispersion (maximum-minimum P-wave durations) of the upper fifth percentile was associated with long-term AF risk in patients ≥60 years old. Some of the 33 patients had probably >1 ECG recorded, before and after AF ablation, and thus the effect of this procedure on, and the reproducibility of, the automated P-wave measurements could be explored. This opportunity should not be lost, because such ECG indices are accessible to all physicians caring for patients with, or who are destined to develop, AF.

Disclosures

None.

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References

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