Review of: "Efficacy of the Electrocardiographic P-Wave Indices (PWIs) in Predicting Atrial High-Rate Episodes (AHREs) With Cardiac Implantable Electronic Devices (CIEDs)"

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Cardiac implantable electronic devices (CIEDs) have revolutionized the management of arrhythmias, providing accurate monitoring and timely intervention. AHRE refers to episodes of atrial tachycardia or atrial fibrillation that last for more than 5 minutes, with a minimum heart rate of 180 beats per minute, detected by cardiac implantable electronic devices (CIEDs) with an atrial lead allowing automated continuous monitoring of atrial rhythm and tracings storage. AHRE has been associated with a higher risk of stroke, and there is still an open debate on whether and when to initiate anticoagulant prophylactic therapy based on their detection and length.

This review aims to evaluate the current evidence on the efficacy of P-wave electrocardiographic indices, generally defined as P-Wave-Indices (PWIs), in predicting AHRE in patients with CIEDs and atrial fibrillation.

The goal of this review, although interesting, lacks clinically relevant information: in the era of “Home Monitoring,” CIED patients are constantly monitored, with instant transmission of a lot of information that allows clinicians to tempestively diagnose and treat atrial arrhythmias considered to be clinically significant. A meticulous involvement of Remote Monitoring in clinical practice may lead to much better patient management than the mere prediction of AHRE according to PWIs. In the text, the authors said “patients with high-risk P-wave indices could be monitored more closely for the development of arrhythmias”; remote monitoring may overcome this problem, already ensuring a continuous and reliable surveillance of CIED patients. Furthermore, both in the abstract and in the conclusions, the authors talk about “patients with AF and CIEDs,” while it would be much more appropriate and clinically relevant to deal with AHRE prediction in patients without an AF diagnosis. Indeed, most trials about AHRE involved patients with no prior diagnosis of atrial fibrillation.

The title and the aim of this review do not properly reflect its content, in which the most part of the text describes the associations between PWIs and different clinical conditions, such as heart failure, stroke, atrioventricular block, atrial fibrillation, and only a few lines try to describe the potential role of PWIs in predicting AHRE, with still a consistent literature gap: trials mentioned in Table 1 lack predictive information about AHRE that should be the main key point to be extrapolated from the table and from the entire review itself. Moreover, it is not clear which of the P-Wave-Indices is more reliable for AHRE prediction or if the authors suggest a precise combination of them.

Some paragraphs look disconnected from the rest of the review, such as the lines in which the role of atrial electrograms (AEG) during electrophysiologic study and ablation procedures is described; it would be better to focalize more deeply on AHRE and their implications. Moreover, the only reported figure just describes the different P-Wave-Indices, thus not adding anything to the text. Authors may add more figures with clinical information regarding AHRE patients according to PWIs.

In the text, several repetitions are present. For example, in the AEG description paragraph, in only two lines, authors repeated “The AEG is a recording of the electrical activity in the atria” and then “An AEG is a recording of the electrical activity of the atria of the heart.”

Sometimes references are not correctly mentioned: in the paragraph “future directions,” authors wrote that “a recent study found that combining electrocardiographic data with measurements of left atrial volume and function improved the ability to predict the development of atrial fibrillation,” with no link to the mentioned title, authors, or journal.

Conclusions and Future Directions should be strengthened, adding more personal considerations and clinical implications following authors’ findings.