

## Preface

# Atrial Flutter and Precision Electrocardiology: An Indissoluble Symbiosis



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*Editors*

The peculiar anatomico-functional characteristics of the atria with their specificity and complexity may generate different sorts of supraventricular arrhythmias with different arrhythmogenic mechanisms. Enhanced automaticity may be responsible for both premature atrial beats and sustained focal atrial tachycardias. Focal electrical activity from the pulmonary veins combined with chaotic impulse conduction may generate atrial fibrillation with mechanisms yet to be defined in detail in specific clinical contexts. When, for different causes, a conduction delay occurs in the atria, this creates the arrhythmogenic substrate underlying a reentrant circuit.

As a consequence, macro-reentrant atrial tachycardias or flutters may become manifest, with the presence on the surface ECG of isoelectric lines between P waves or a continuously waving P-wave pattern to differentiate the former from the latter.

If, on one hand, surface ECG morphology is essential to guide the diagnosis of the typical forms of atrial flutter, usually relatively easy to ablate, then, on the other, the ECG pattern may be of limited value to clarify complex forms of atypical atrial flutter. In these atypical forms,

associated at times with complex postsurgical anatomy, accurate intracavitary mapping is needed to clarify the reentry course and identify the area critical for reentry in order to plan a rational and successful ablation strategy.

In reality, atrial flutter is a cardiac arrhythmia with a long history beginning many decades ago when served as a model to study atrial macro-reentry.

In fact, the term “atrial flutter” per se does not identify a single arrhythmia, and in clinical practice, it is commonly used to define organized atrial arrhythmias with variable atrioventricular conduction ratio. This generalization may create confusion, affecting this arrhythmia approach and treatment.

The last attempt to classify atrial flutters dates back a couple of decades ago, and the new generations of cardiologists may not be familiar with this classification, limiting their ability to distinguish different types of atrial flutters encountered in daily clinical practice.

Following our philosophy of precision electrocardiology, by reading the sequence of articles published in this issue, the readership will focus on how to discriminate the different forms of atrial flutter based on surface electrocardiogram and

intracavitary signals and to correctly approach these arrhythmias invasively by ablation.

Correct diagnosis and appropriate treatment in different patient populations are of the utmost importance, as this arrhythmia may have a strong impact on morbidity, especially in patients with severe structural heart disease.

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