More or Less Irregularity in Understanding an Irregular Rhythm: Atrial Fibrillation Classification and Racial Differences

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The past few years have witnessed unprecedented advances in the field of atrial fibrillation (AF) research. This includes developing new AF risk prediction models, introducing safer anticoagulants, and identifying several novel AF risk factors. Despite these great advances, however, we still do not have a full understanding of some of the basic concepts about this common arrhythmia that affects over 2 million people in the United States—a number that is expected to double in the next few decades. AF is a complex disease with a multifactorial etiology and far-reaching complications. Although we may now know several traditional and novel AF risk factors, it is not entirely clear how they interact with each other under different predispositions to AF. This lack of holistic understanding of exactly how and why AF develops makes this irregular cardiac rhythm difficult to understand or even describe.

In this issue of JAMA, there are 2 separate articles in which the authors sought to address some of the irregularities in understanding the epidemiology of AF. In one article Lubitz et al address the classification of AF patterns in longitudinal studies, and in another article Thomas et al address the racial differences in the prevalence of AF.

Classification of AF Patterns

The current recommended classification of AF patterns by the American College of Cardiology (ACC), the American Heart Association (AHA), and the European Society of Cardiology (ESC) is based on the timing of detection, method of conversion to sinus rhythm, whether self-terminating or induced, recurrence, and duration of AF. AF is classified as “first-detected” if diagnosed in individuals who have no history of this arrhythmia. AF that recurs after the first-detected episode is considered “paroxysmal” if it self-terminates within 1 week, “persistent” if it continues beyond this period and is not self-terminating, or “permanent” if efforts to terminate the rhythm fail or are not attempted. This classification scheme represents a consensus driven by a desire for simplicity and clinical relevance. As could be imagined, patients could be moving from one AF pattern to another based on the natural history of the disease or intervening treatment. Even cases with permanent AF could change label to be persistent AF if an intervention (eg, catheter ablation) is successfully applied at a later stage. Hence, it may not be always simple to consistently classify AF using the ACC/AHA/ESC classification scheme, and subsequently it may not be always feasible to examine or compare the clinical relevance of different AF patterns since we cannot identify each pattern precisely and consistently in the first place.

In the clinical setting, the main purpose of giving a certain label to an AF pattern is to rationalize the need for a specific treatment option(s) at the time the patient is seen. Since changes are expected in patients’ conditions and subsequent treatment plans even in the short-term, having different labels for AF at different times should not pose significant challenges in patient care. In this context, the recommended ACC/AHA/ESC AF classification fulfills its purpose as part of patient care. However, it may not be ideal in the research setting, especially in long-term population studies where using a highly reproducible easy-to-apply method for AF classification is critical. With most of our evidence-based knowledge obtained from large population studies, using an AF classification that fits both clinical and research settings is needed. The article by Lubitz et al published in this issue of JAMA is a significant step toward this aim.

Using data from the Framingham Heart Study, Lubitz et al proposed using a fixed 2-year time window to classify AF into 3 patterns: AF without recurrence, recurrent AF, and sustained AF. Compared with individuals without 2-year AF

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Cardiac rhythm disorder. What is sure, however, is that with the increasing life expectancy and aging of the US population, having more research in an age-related disease such as AF is really needed and worth investing.

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None.

References


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