Atrial Fibrillation Through the Patient’s Eyes

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The Canadian Cardiovascular Society Severity in Atrial Fibrillation (CCS-SAF) scale described in the report by Dorian et al in this issue of *Circulation: Arrhythmia and Electrophysiology* is worthy of our attention because it offers us something we can use. It also serves a deeper purpose and offers us something we should use.

### Article see p 218

It is of use because it gives us a simple and reliable tool to use at the bedside to understand patients’ experiences with atrial fibrillation. We have scales that assess patient’s overall health status (so-called generic questionnaires), the most widely used of which is the SF-36 questionnaire. The SF-36 has been used previously to assess health status in a number of studies of atrial fibrillation. Its length, however, limits its use in everyday clinical practice. A shorter version (the SF-12) is available, but it is not clear if this questionnaire is able to separate the impact of atrial fibrillation from the burden of comorbidity that is the lot of the typical patient. We also have questionnaires specific for atrial fibrillation. Although they might be able to dissect the impact of atrial fibrillation from that of comorbidity, they have not been widely used and are too long for bedside use.

Scales useful at the bedside have characteristics in common. They combine data from a large enough number of variables to provide adequate discrimination yet from a small enough number of variables to allow commitment to memory—usually 3 to 5. The data are typically available from the history, physical examination, and/or routine laboratory testing. If calculation is needed, it is by simple sum. The prototype for a universally useful scale is the Apgar score for assessing the newborn infant. It assigns values of 0, 1, or 2 to levels of 5 variables (heart rate, respiration, muscle tone, skin color, and response to stimuli) and sums them to give a score from 0 to 10. Other widely used scales include the New York Heart Association classification of heart failure severity, well known to cardiologists, in which a score of 1 to 4 is assigned on the basis of the history.

The CCS-SAF scale has these properties of a clinimetrically useful tool. Based on experience with a disease-specific questionnaire for atrial fibrillation, an expert panel developed a 3-step process to classify patients’ experiences with atrial fibrillation into 1 of 5 levels. First, the presence of atrial fibrillation symptoms (palpitations, dyspnea, dizziness, chest pain, weakness) is obtained. Next, an association between symptoms and an episode or episodes of atrial fibrillation is sought. Finally, the impact of the symptoms on patients’ functioning is established, ranging from asymptomatic (SAF 0) through minimal (SAF 1), minor (SAF 2), and moderate (SAF 3), to severe (SAF 4). The “Symptoms, Association, Functioning” assessment scheme corresponds nicely to the scale’s “SAF” acronym.

### The Current Report Shows the SAF to Be Reliable

The authors made efforts to assess reproducibility of findings. Seventeen physicians who had not received special instruction in use of the scale assigned SAF classes to a relatively large number of patients at 5 different centers. Assignments were consistent among centers and raters. We do not know if the scale gives ratings reproducible over time in patients whose clinical conditions have not changed, but this is a somewhat minor issue.

The authors demonstrated the validity of the scale. For a clinimetric instrument to be valid, it must pass several tests. First, it must demonstrate “content validity,” measuring what it purports to measure. In practice, this is usually judged by assessing the instrument’s “face validity”—the degree to which the included items make sense and cover all the condition’s relevant aspects as judged by experienced clinicians. This was done in previous work. Second, it must demonstrate “construct validity,” showing expected correlations with related and previously validated measures. Expected correlations should be high but not too high, with correlation coefficients generally between 0.30 and 0.40—any higher, the new instrument is not telling us anything new; any lower, the instrument is not telling us anything at all. The SAF scale has such correlations with a disease-specific atrial fibrillation instrument and with the generic SF-36. In addition, emergency department visits, hospitalizations, and cardioversions occur more frequently with higher SAF class. Many clinicians will be surprised by the finding that the frequency of episodes of atrial fibrillation does not significantly affect patients’ perception of the severity of atrial fibrillation.

Finally, the authors have shown the scale to have excellent linearity and additivity. As shown in the article’s Figure 2, a change in class is associated with the same magnitude of change in percentage of standard deviation of the SF-36 physical component score regardless of whether the class change is from 0 to 1, 1 to 2, 2 to 3, 3 to 4, or 4 to 5.

### Why Should We Use It?

Over the past 60 years, clinical medicine has been changing in response to pressures that have acted in parallel but not necessarily in partnership. The first pressure is the demand...
that medical practice always be scientifically rigorous. Although medicine has claimed a place for itself among the sciences since at least the time of William Harvey, progress toward scientific rigor has accelerated sharply since World War II. Randomized, blinded clinical trials have become the norm, and standards for conducting and interpreting them have risen. Advances in biostatistics have steadily worn away at observational biases.

The second pressure is the demand that medical practice always be moral. Here again, an ethical coda for medicine had been present for centuries, but extension and formalization of that coda has quickened since World War II, beginning with the Nuremberg trials. Advance directives and informed consent have become norms. General agreement has emerged on the moral principles of autonomy, nonmaleficence, beneficence, and justice as the foundation for ethical behavior in medicine.9

Of these, autonomy, the notion that individuals should act freely in accordance with a self-chosen plan,10 is directly relevant to the current discussion. The fundamental importance of autonomy is deeply rooted in Western tradition, having been a cornerstone of Immanuel Kant’s profoundly influential moral thinking in the 18th century.11 To respect autonomy and to allow individuals’ medical care to proceed according to a self-chosen plan, we must know what that plan is. To know that, we must understand the patient’s illness through his or her eyes as clearly as possible.

Rigorous, well-validated health status scales are the place where expectations to be scientifically rigorous and to respect patient autonomy meet. As such, the CCS-SAF scale should become part of the fabric of daily practice.

Disclosures

None.

References


10. Ibid p 99.


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