Problems in the Pharmacological Evaluation of Paroxysmal Atrial Fibrillation

In the present era, sophisticated electrophysiological interventional techniques have been developed for the treatment of paroxysmal supraventricular tachycardia, atrial flutter and ventricular tachycardia. However, the management of paroxysmal atrial fibrillation (PAF) still mainly depends on the use of antiarrhythmic agents. The occurrence of PAF is known to be unpredictable and sporadic (1), which makes it difficult to evaluate the effects of antiarrhythmic drugs. Another problem with this arrhythmia is that some patients are symptomatic and others are asymptomatic. Although Holter monitoring, which can detect asymptomatic arrhythmias, is used for assessing the treatment of ventricular arrhythmias, the sporadic and apparently transient occurrence of PAF makes it unsuitable for study by Holter monitoring.

In this issue of the Journal, Iga et al (2) described that 79 patients were symptomatic and 29 patients asymptomatic when they interviewed 108 consecutive patients with documented PAF regarding symptoms, frequency and trigger factors of PAF.

Among the 79 symptomatic patients, the frequency of PAF was more than once a week in 12 patients and was less than once a month in 30 patients. Forty-nine of these 79 patients had obvious trigger factors inducing PAF such as fatigue, lack of sleep, mental stress, heavy drinking and vigorous exercise. These patients in whom PAF was induced by trigger factors are not appropriate for long-term pharmacological evaluation. Seven of the remaining 30 patients, who had no obvious trigger factors, had previously experienced PAF only less than twice in their lives. They stressed that only one fifth of the PAF patients was suitable for pharmacological evaluation. This study raised many questions regarding the clinical trials on antiarrhythmic agents or the evaluation of pharmacological therapy in patients with PAF.

Transtelephonic electrocardiogram (ECG) monitoring, a relatively new technique, makes it possible to document and quantify PAF and also to correlate PAF with the subjective symptoms experienced by the patients (3–5). Anderson et al (4) reported that symptoms are good predictors of a rhythm disorder, as demonstrated on simultaneous transtelephonic monitoring in 88% of phone calls (PAF was present in 69%). Using the same transtelephonic method, Bhandari et al (5) observed that the sensitivity of a symptomatic cell was high for PAF (89%) and conversely, the lack of symptoms was associated with the absence of PAF in approximately 90% of the asymptomatic calls. This relationship between presence of the reported symptoms and presence of the ECG-documented episodes of PAF or between the absence of the reported symptoms and absence of the ECG-documented PAF episodes seems to be important because a reduction or absence of a patient’s symptom may in fact be associated with successful control of the arrhythmia when antiarrhythmic agents are used. Furthermore, this technique may be more cost effective than repeated Holter monitoring in the management of patients with PAF (5). However, this technique may not be applicable for patients with relatively infrequent episodes of PAF or for those with no symptoms (5).

From the observations of repeated Holter monitoring, Page et al (6) described that in the group of patients with symptomatic PAF, asymptomatic PAF occurred 12.1 times as often as symptomatic PAF; the mean rates (expressed as events/100 d/patient) were 62.5 in asymptomatic PAF and 5.2 in symptomatic PAF. Wolk et al reported that asymptomatic PAF during Holter monitoring occurred in 22–27% of patients with complete clinical improvement even after taking propranolol or propafenone (7). Holter monitoring can detect not only symptomatic arrhythmias but also asymptomatic arrhythmias, but it has strict limitations in patients with days or weeks between episodes, as seen with PAF. From the point of view of using antiarrhythmic drugs to improve a patient’s sense of well-being, asymptomatic PAF is not a clinical problem. If, however, such an arrhythmia increases the risk of stroke, then it could be an important problem (6). Unfortunately, the risk of stroke from asymptomatic atrial fibrillation is not known.

Thus, it seems necessary to select patients who have had frequent and symptomatic episodes of PAF with no association of trigger factors which induce PAF when we assess the effects of antiarrhythmic drug therapy on PAF in patients with no symptoms requires further study.

Teruhisa Tanabe, MD
The Department of Cardiovascular Medicine,
Tokai University School of Medicine,
Shimokasuya, Isehara 259-1193

References


