Clinical Update and Management of Atrial High Rate Electric Activities Detected in Cardiac Electronic Monitor in Atrial Arrhythmia Patients

Chun Hwang,MD

Background:
Atrial fibrillation (Afib) can be completely asymptomatic despite pt has been persistent atrial fibrillatory status and often diagnosed during the routine evaluation of ECG for non-cardiac disease. The clinical characteristics of the pts are: older Afib pt with slower heart rate or well controlled heart rate due to the intrinsic or extrinsic AV node conduction disease; female gender; and sedentary life style. The literatures suggest that among these asymptomatic Afib pts, significant number of pts have paroxysmal atrial fibrillation that make Afib diagnoses even more difficult depending on the Afib durations and the frequency of recurrences. The major clinical complication associated with Afib is stroke. There fore, long monitoring for Afib events with cardiac electronic device became subject of study interests and the cardiac monitoring device technologies improved significantly. The major benefits of long term cardiac monitoring include to define the outcome and Afib burden post Afib ablation and to evaluate silent stroke or TIA unknown etiology but no define clinical guidelines are available and mostly used for study purposes. The long term cardiac monitoring device can vary such as non-implantable that often used as needed intermittently such as smart phone to trigger event monitor or long term recording capable implantable device that cane be easily implanted subcutaneously to cardiac defibrillator. Each technology has indications, limitations, costs and associated complications.

Clinical Findings:
There have two clinical arenas that long term cardiac monitoring has been studied in last decade: 1) silent stroke 2) post afib ablation evaluation.
Post silent ischemic stroke evaluation with cardiac electronic monitoring for intermittent or long period showed that Afib incidence in this group ranged from 0% to 23% and significant number of these pts had Afib duration less than 30 seconds. Currently it is not clear clinical significant of these short lasting events in these pts in relationship with the stroke. There are no long-term cardiac monitoring data available in normal or low risks for stroke group for comparison. These short lasting Afib events may not be true risk factors but could just be a marker for future stroke. Therefore, no clinical consensus has been reached who should have long term cardiac monitoring among these pts. The most important question is that since majority of silent stoke pts are managed with empiric anti-coagulation and can cardiac monitoring in these grope can improve long-term clinical outcome compared pt that one did not.

Current practice guide line define the success of Afib ablation based on the recurrences less than 30 seconds when pt underwent 24 Hr Holter monitoring in 6 months intervals for 1 or 2 yrs follow-up but does not list a use of long term implantable cardiac monitoring part of routine post Afib ablation evaluation. Clearly, the guideline has several limitations but also has very strict criteria for ablation success. Therefore, to meet these criteria to avoid criticism from reviewers of scientific papers, the implantation of long-term cardiac monitor became part of studies including surgical and catheter ablations. The current consensus is not routine implantation of long-term cardiac monitoring device post Afib ablation unless pt already had implantable cardiac device such as pacemaker or ICD. However, it is important to know the limitations and potential problems may exist in each implantable device and recording characteristics before make proper assessment to avoid false positive Afib events.

Recently, the long-term (>5 yrs) outcome of Afib ablation data have been reported and shown to have average success rates 55% or less especially in persistent Afib group and projected outcome trend was slow continuous decline. Therefore Afib is not curable disease in majority of pts with currently practiced Afib ablation strategies. This data suggest that to find true success rate of ablation outcome probably one needs lifetime cardiac monitoring. Such clinical practice is not feasible and has significant clinical as well as financial implication to the pts and health care cost. The practical perspective view is that the anti-coagulation should continue indefinitely exception to the few pts who have true intolerance or contra-indications. In these minority of pts left atrial appendage closure using percutaneous or surgical approach can be useful. The long-term anticoagulation will minimize the need for the long-term cardiac monitoring for stroke risk assessment due to the Afib recurrences majority of pts who Afib ablation. However, the long cardiac monitoring can be useful to evaluated significant burden due to the arrhythmia events that could not be documented with simple monitoring technique. The long cardiac monitoring data may often change the treatment plan in this subset of pts.

Summary:
The general consensus of primary goal in symptomatic Afib pt therapy is improve quality of life and prevent stroke but also it is important to understand that Afib is multi-etiological disease with on-going substrate remodeling that requires long-term follow-up with close surveillance to detect deterioration of clinical status especially in elderly pts. In subset of pts who has significantly worsening clinical symptoms may benefit from long term cardiac monitoring to guide the therapies. Therefore, the indication for rhythm control strategy can change and often cross over during the follow-up and also these changes may depend on many non-cardiac factors.