LETTER TO THE EDITOR

Hemodialysis Affects Interatrial Conduction

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To the Editor,

We read with interest the manuscript by Astan et al.¹ recently published in the Journal. We would like to congratulate the authors on their efforts. Their study aimed to investigate the acute effects of hemodialysis on ECG parameters looking for noninvasive markers of susceptibility to arrhythmias, which can ultimately contribute to cardiovascular morbidity and mortality in the hemodialysis population. The authors specifically focused on P wave and QRS complex amplitude as well as on QRS duration and QT dispersion, and their changes after treatment. Most of the changes were attributed to the fluid loss induced by hemodialysis. We would like to comment on an important ECG variable that unfortunately the authors did not comment on. P-wave duration, as a manifestation of interatrial conduction, is associated with the development of supraventricular arrhythmias (more precisely atrial fibrillation [AF] and atypical atrial flutter)^{2–6} and possibly with total cardiovascular mortality.⁷

Interatrial delayed conduction leading to P-wave prolongation (≥ 120 ms) is the hallmark of interatrial block (IAB).⁸ IAB can be classified as partial (P wave ≥ 120 ms) or advanced (P wave ≥ 120 ms with $\pm$ morphology in leads II, III and aVF). IAB is highly prevalent in the general population⁹ as well

as in hemodialysis patients.¹⁰ We recently reported a prevalence of IAB in the hemodialysis population of almost 59%.¹¹ Therefore, more than half of the candidates for hemodialysis treatment already have IAB. Additionally, intradialysis electrolyte changes, specifically potassium reduction, lead to further slowing of interatrial conduction velocity¹² that ultimately could favor the development of AF or act as a trigger.¹³

In our experience (and others), about 10% of the hemodialysis patients^{10,11} show advanced IAB which could constitute a Bayes' syndrome (IAB + AF) if they further develop AF.¹⁴

P-wave duration and P-wave morphology in the inferior leads should be recognized as a noninvasive marker of susceptibility to arrhythmias (AF) also in the hemodialysis population. We encourage the authors to evaluate the P-wave duration and morphology in their series before and after dialysis treatment.

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