CASE REPORT

The First Report of Bayés Syndrome in Hemodialysis Patient

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A chronic hemodialysis patient—known to have advanced interatrial block (IAB)—had reported symptoms suggesting arrhythmias, hence she underwent hemodialysis treatment while on the cardiac monitor. This allowed us to recognize the occurrence of paroxysmal atrial fibrillation and, in turn, disclose the first case of Bayés syndrome. Even though atrial fibrillation and IAB are very frequent in hemodialysis patients, Bayés syndrome, that comprehends both, has never been described, likely because the IAB is often overlooked and undiagnosed. This case could improve the awareness of IAB and of the Bayés syndrome in hemodialysis population.

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The association of interatrial block (IAB) with the occurrence of atrial fibrillation has been referred to as Bayés syndrome.¹ In hemodialysis population there is a high prevalence of both, atrial fibrillation² and IAB^{3,4} but the Bayés syndrome has never been reported.

CASE DESCRIPTION

We report the case of an 82-year-old female outpatient with chronic kidney disease that experienced paroxysmal atrial fibrillation during hemodialysis session while on cardiac monitor.

The patient had been on 3-weekly bicarbonate-hemodialysis treatment for 4 years. Her medical history included rheumatoid arthritis, hyperparathyroidism, and hypertension with left ventricular hypertrophy, mitral valve dysfunction and left atrial enlargement. She had never experienced arrhythmias.

She had reported palpitations, breathlessness, and dizziness lasting for several minutes the day before her hemodialysis session; 12-lead ECG was therefore obtained before starting hemodialysis

(Fig. 1). It showed normal sinus rhythm with no other significant acute abnormalities. Interestingly, the P wave was larger than 120 ms, and it was biphasic with negative terminal component in the inferior leads, therefore fulfilling criteria for advanced IAB, as defined by Bayés de Luna and colleagues.⁵

Blood samples were collected, and continuous heart rhythm monitor was started.

Hemodialysis treatment was performed with a dialysis solution that was containing 3 mmol/L of K⁺, to avoid rapid electrolyte shifts.

In the middle of the treatment, asymptomatic paroxysmal atrial fibrillation occurred and spontaneously disappeared within few minutes (Fig. 2). At that time, neither acid-base nor electrolyte derangement was found. Blood gas analysis from central venous catheter showed pH 7.43; pCO₂ 45 mmHg; HCO₃ 29.1 mmol/L; Na⁺ 135 mmol/L; K⁺ 3.6 mmol/L; Ca⁺⁺ 1.15 mmol/L. A few other paroxysms occurred in the last part of hemodialysis session; some of them were associated with mild hypotension requiring fluid therapy. By the end of hemodialysis session, she was in normal sinus rhythm. Preventative

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Figure 1. 12-lead ECG. Arrows mark biphasic P wave with terminal negative component in inferior leads.

drug therapy with Flecainide acetate 50 mg orally twice a day was started. In the following three hemodialysis sessions, she maintained sinus rhythm without any paroxysmal atrial fibrillation occurrence.

COMMENTS

Advanced IAB may occur more frequently in the elderly and patients with structural heart disease.^{1,5} The most frequent association is seen with left atrial enlargement.^{1,5} Our patient had all these risk factors. Moreover, the prevalence of IAB in hemodialysis patients is close to 60%,^{3,4} whereas advanced IAB is found in 10% of them.^{3,4} Even the less common cases of reversible blocks have been described in this population.⁶ The onset of arrhythmias during hemodialysis treatment is all but surprising, because treatment acts as a trigger,^{7,8} although asymptomatic arrhythmic events have been recently reported in virtually all patients with end-stage kidney disease.⁹ Similarly, the association of IAB and the occurrence of atrial fibrillation—called Bayés syndrome¹—are to

Figure 2. Heart rhythm monitoring. In the third strip paroxysmal atrial fibrillation has been recorded.

be largely expected in this population. However, the occurrence of Bayés syndrome, which features both these conditions, has never been described.

Here we report the first case occurring in an hemodialysis patient. Most likely poor awareness of IAB, more so by nephrologists, accounts for lack of recognition of this syndrome. Since advanced IAB is a strong predictor of supraventricular arrhythmias in a variety of clinical scenarios,¹ and possibly also in hemodialysis patients,¹⁰ recognition of Bayés syndrome is not a merely academic issue. It could select high-risk patients for which pharmacological therapy could be beneficial. It is yet to be proven whether an antiarrhythmic drug improves morbidity and mortality in patients with Bayés syndrome. In hemodialysis population, amiodarone cannot be the choice because of very unfavorable pharmacokinetics. Our choice was therefore an empirical low-dose flecainide acetate regimen.

CONCLUSION

We reported for the first time Bayés syndrome in an hemodialysis patient. Based on the large prevalence in hemodialysis population of IAB and atrial fibrillation—both features of this syndrome—this could be the first case of an endemic, but unrecognized condition as IAB would seem to be. Our report might increase awareness of Bayés

syndrome that potentially has significant clinical implications also in hemodialysis patients.

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