Outpatient IV Sotalol Load Used to Replace Oral Sotalol Hospital Admission.

Beshih AG, Maginot KM, Von Bergen NH,

Introduction:

We describe the first use of a single day (outpatient) IV Sotalol load used to replace an oral Sotalol load, completed in an adult with congenital heart disease and a history of recurrent atrial arrhythmias.

Atrial arrhythmias such as intraatrial reentrant tachycardia or atrial fibrillation are commonly seen in patients with palliated congenital heart disease and are even more prevalent in older adults. With appropriate monitoring, especially at the time of initiation, Sotalol can be a safe and effective way to treat atrial arrhythmias secondary to its beta receptor and potassium channel blocking effects. Unfortunately, due to its proarrhythmia risk and associated lengthening of repolarization, Sotalol initiation typically requires a 3-day hospitalization for monitoring.

Case report: A 33 year old male with a history of Shone’s complex (congenital aortic stenosis and mitral valve disease), status post multiple palliations including valvuloplasty, Ross and Bentall procedure, mitral valve repair and with residual pulmonary, aortic and mitral valve disease had a history of atrial arrhythmias. He also had concurrent psychiatric concerns including severe anxiety. He had undergone an Electrophysiology study with ablation of multiple arrhythmia circuits of intra-atrial reentrant tachycardia (IART) in 2016 with some improvement of symptoms. However, he continued to have occasional non-sustained atrial arrhythmias suggestive of IART. A repeat EP study or medication adjustments were discussed. However, in part due to underlying psychiatric concerns, the patient was reluctant to undergo any further procedures and refused overnight admission. Thus, an outpatient IV Sotalol load (single day monitoring) with transition to oral Sotalol was recommended.

Consent was obtained for Sotalol initiation, and the patient was observed in a hospital unit with telemetry. Baseline vitals were taken, and peripheral IV placed. Electrolytes, BUN/Creat, Creat clearance were all normal. A baseline ECG showed sinus with normal QRS duration and QTc (~400 msec). Based on mathematical modeling of a steady state, 40 mg Sotalol was administered IV over 2 hours. The telemetry was set to recognize and alarm for significant lengthening of the QTc. An ECG was performed every hour throughout infusion and was repeated 2 hours post-infusion with plans to discontinue the Sotalol infusion for QTc > 500 msec. Two hours post-infusion, 80 mg oral Sotalol was given, and ECGs were evaluated at 2 and 4 hours later. All ECGs showed normal QTc. Sotalol infusion and post-infusion QTc measurements were only slightly longer than pre-Sotalol load QTc. The longest QTc was 430 msec. No symptoms or complications were noted, and he was discharged home on 80 mg oral Solatol. Since starting Sotalol, the patient has done well with minimal palpitations.

Discussion and Conclusion: Atrial arrhythmias are the most common sustained cardiac arrhythmias in clinical practice. Sotalol may be considered for arrhythmia control but typically requires a 3-day admission for monitoring during the loading period. IV Sotalol rapidly reaches steady state, so could theoretically replace the prolonged monitoring period recommended for an oral Sotalol load. The IV/PO Sotalol load given to our patient was expected to provide a similar steady state as a typical 3-day oral load of Sotalol 80 mg BID. The unique factors of patient preference, psychological concerns, arrhythmia burden, and congenital heart disease prompted the use of IV Sotalol for a single day Sotalol load. This case illustrates the potential advantages of outpatient IV Sotalol load including reduction in hospital admissions, reduction in length of time required for monitoring during the loading period with an ultimate reduction of cost to patient, both in time and financial resources. Further study is necessary in order to ensure the safety across various patient populations.