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SODIUM CHANNEL BLOCKER MONOTHERAPY IN PATIENTS WITH CONGENITAL LONG QT SYNDROME

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Background: Long QT syndrome (LQTS) is a cardiac channelopathy generally managed pharmacologically, surgically, or with an implantable cardioverter defibrillator (ICD). Though first-line pharmacotherapy involves beta blockers (BB), sodium channel blockers (SCBs) may be used as adjunct therapy, primarily in patients with sodium channel-mediated type 3 LQTS (LQT3). However, in patients with severe BB-associated side effects, SCB monotherapy could be considered.

Objective: To evaluate the use of SCB monotherapy in a large single center cohort of patients with LQT3 and determine the phenotype and outcomes of LQT3 patients treated with SCB monotherapy.

Methods: Among 1304 patients evaluated, risk stratified, and treated for LQTS at Mayo Clinic, a retrospective analysis was performed to identify all patients with LQT3 who received SCB monotherapy. Electronic medical records were reviewed for patient demographics, clinical characteristics, and frequency and type of breakthrough cardiac events (BCEs).

Results: Of the 154 patients with LQT3 (12% of entire LQTS cohort), 25/154 (16%) were on SCB monotherapy [10 (40%) female, mean age at first visit 19 ± 13 years]. Twenty-two (88%) patients were treated with mexiletine (MEX) and 3 (12%) with flecainide (FLEC). Two (8%) patients were symptomatic (nonsustained ventricular tachycardia and syncopal episodes) prior to SCB treatment. Primary motivation for SCB monotherapy was consistent and persistent QT prolongation in 18/25 (72%) patients. After SCB monotherapy, the QTc decreased from 482 (+6)ms to 458 (+5)ms (p<0.0001). Moreover, 6 (24%) patients received SCB monotherapy due to BB intolerance. Interestingly, 14/22 (64%) MEX-treated patients had the common SCN5A-E1784K variant. Of note, 6/154 (4%) of all LQT3 patients in our clinic have this variant. In contrast, the 3 FLEC-treated patients received SCB monotherapy due to BB intolerance. Interestingly, 14/22 (64%) MEX-treated patients had the common SCN5A-E1784K variant. Of note, 6/154 (4%) of all LQT3 patients in our clinic have this variant. In contrast, the 3 FLEC-treated patients received SCB monotherapy due to BB intolerance. Interestingly, 14/22 (64%) MEX-treated patients had the common SCN5A-E1784K variant. Of note, 6/154 (4%) of all LQT3 patients in our clinic have this variant. In contrast, the 3 FLEC-treated patients received SCB monotherapy due to BB intolerance. Interestingly, 14/22 (64%) MEX-treated patients had the common SCN5A-E1784K variant. Of note, 6/154 (4%) of all LQT3 patients in our clinic have this variant. In contrast, the 3 FLEC-treated patients received SCB monotherapy due to BB intolerance. Interestingly, 14/22 (64%) MEX-treated patients had the common SCN5A-E1784K variant. Of note, 6/154 (4%) of all LQT3 patients in our clinic have this variant. In contrast, the 3 FLEC-treated patients received SCB monotherapy due to BB intolerance. Interestingly, 14/22 (64%) MEX-treated patients had the common SCN5A-E1784K variant. Of note, 6/154 (4%) of all LQT3 patients in our clinic have this variant. In contrast, the 3 FLEC-treated patients received SCB monotherapy due to BB intolerance. Interestingly, 14/22 (64%) MEX-treated patients had the common SCN5A-E1784K variant. Of note, 6/154 (4%) of all LQT3 patients in our clinic have this variant. In contrast, the 3 FLEC-treated patients received SCB monotherapy due to BB intolerance.

Conclusion: SCB monotherapy has been used in 2% of our LQTS patients and 16% of our patients with LQT3. Rather than being compelled to consider a prophylactic ICD, for those otherwise low-risk patients with LQT3 and BB intolerance, SCB monotherapy represents a safe and effective treatment paradigm.

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MULTIMODALITY EVALUATION OF LEFT ATRIAL APPENDAGE LEAKS ARISING AFTER INCOMPLETE LEFT ATRIAL APPENDAGE CLOSURE

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Background: Methods of leak closure after incomplete left atrial appendage closure (LAAC) have shown early feasibility, however no comparison study of different modalities exists.

Objective: To assess and compare the available methods of leak closure after incomplete LAAC.

Methods: We performed a 3-way observational comparison study of detachable embolization coils, vascular plugs/septal occluders and radiofrequency ablation (RFA) for leak closure after incomplete LAAC. Both acute postprocedural and follow-up closure (no leak or <1mm leak at end of procedure) were evaluated. Safety endpoints included peri-/post-procedural complications.

Results: Of 160 patients, 74.3% patients had prior endocardial LAAC; 25.6% had epicardial closure who were referred for leak closure. Acute success (closure/<1mm leak) was achieved in all patients. 45-day follow-up transesophageal echocardiogram (TEE) showed overall complete closure or mild/minimal PDL (1-2mm) in 93.7% patients, with a higher success rate in vascular plug cohort (100%), followed by the RFA cohort (93%) and detachable embolization coils cohort (91%) (p=0.0005). 2 patients in the coils cohort (3.1%) experienced any complications (cardiac tamponade not resulting in death), with no pericardial effusions, stroke or thromboembolic events in any cohorts.

Conclusion: Our study demonstrates the overall safety and efficacy of different PDL closure techniques with 100% success rate with vascular plugs followed by RF ablation (93%) and detachable embolization coils (91%) after LAAC via either epicardial or endocardial approaches.

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THE EFFECT OF SOTALOL ON ALL-CAUSE MORTALITY AND CARDIOVASCULAR OUTCOMES IN ATRIAL FIBRILLATION

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Background: Sotalol is commonly used for the management of atrial arrhythmias. Given the proarrhythmic side effects, a careful examination of contemporary data for its effects on mortality and other cardiovascular outcomes is warranted.

Objective: We sought to compare the impact of Sotalol with placebo or rate control drugs for the treatment of AF, on mortality and risk of Torsades de Pointes (TdP) using meta-analytic techniques.

Methods: A systematic search of MEDLINE and EMBASE was conducted for randomized control trials (RCTs) comparing all-cause mortality and incidence of TdP, withdrawal due to side effects, stroke, major adverse cardiac events (MACE), conversion to sinus rhythm, and recurrent atrial fibrillation (AF) between Sotalol vs placebo or rate control drugs. Risk ratios (RR) were reported using Mantel Haenszel method.