Arrhythmias and Clinical EP

IMPROVEMENT IN COST AND EFFICIENCY IN ELECTROPHYSIOLOGY LABORATORY BY CARDIAC COMPUTED TOMOGRAPHY TO EXCLUDE LEFT ATRIAL APPENDAGE THROMBUS PRIOR TO ATRIAL FIBRILLATION ABLATION

Poster Contributions
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Background: Atrial fibrillation (AF) is an ever-increasing problem with growing financial burden on the healthcare system. $6 billion a year has been attributed directly to AF. Peri-procedural imaging in patients undergoing atrial fibrillation ablation (AFA) is estimated at $1,200, roughly 6% of mean Medicare expenditure for catheter based AFA. Cardiac computed tomographic angiography (CCTA) is needed for pulmonary vein mapping prior to AFA. Additionally, CCTA has shown to be a highly sensitive alternative to the semi-invasive transesophageal echocardiogram (TEE) to rule out left atrial appendage thrombus (LAAT) prior to AFA. We hypothesize use of CCTA for pulmonary vein mapping and to rule out LAA will improve cost and lab efficiency.

Methods: We prospectively screened 116 consecutive patients with AF undergoing cryoablation. Sixty patients met the inclusion criteria and consented. Follow up data on 46 patients was complete and included in this analysis. CCTA with delayed enhancement was performed within 72 hours of AFA. Once LAAT was ruled out, patients were enrolled into the study and planned TEE was cancelled. Retrospective control cohort that had both CCTA and TEE prior to AFA was identified. Direct cost data, electrophysiology laboratory utilization time and 30 day stroke outcomes were collected from the EMR, follow up phone calls or clinic visits and comparative analysis were performed.

Results: Baseline characteristics were similar between the two groups; mean age 64 vs 62 years, male sex 63 vs 74% and median CHA2DS2-VASc score was 2 vs 1 ($p=0.09$). Median procedural cost reduced from $16,612 in the control group to $15,902 in CCTA-only group ($p=0.04$) and the electrophysiology laboratory procedural time reduced from 240 ± 37 to 183 ± 36 minutes ($p<0.001$). There were no strokes reported on 30 day follow up in the CCTA-only group.

Conclusions: In low to intermediate stroke risk patients with paroxysmal AF undergoing cryoablation, eliminating TEE and employing CCTA-only imaging strategy to rule out LAAT, improves electrophysiology laboratory utilization at a reduced peri-procedural cost without increasing the risk of post procedure stoke.