Conclusion: An ensemble of features based deep learning CNN was developed that reduced inappropriate AF detection in ICM by over 90% while preserving sensitivity for detection of true AF. For an application specific feature based CNN, a smaller sized custom CNN performed as well as a larger sized established CNN.

SYSTEMATIC REVIEW AND META ANALYSIS OF CURRENTLY AVAILABLE LEFT ATRIAL APPENDAGE CLOSURE DEVICES

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Background: Recent advancements in management of atrial fibrillation and high risk bleeding patients with devices, are calling for a direct comparison of the left atrial appendage closure (LAAC) devices. This meta analysis compares the available LAAC devices and their success rate in relation to peri device leak at 45 day follow up.

Objective: Atrial fibrillation is the most frequent cardiac arrhythmia affecting 15 - 20% of all ischemic strokes. Oral anticoagulation is used to decrease the risk of stroke but in patients with bleeding and CI of anticoagulation, LAAC is proven to be equally effective as >90% of the thrombi are formed in the left atrial appendage. Most commonly used LAAC devices are Watchman 2.5, Amulet and Watchman FLX. Our aim for this study is primarily focused on peridevice leak rate at 45 day follow up with either TEE or CCTA for each device by pooling data from the available studies till date.

Methods: We searched PubMed, AHA, JACC and Science Direct and article references for randomized controlled trials of patients with LAAC devices and rate of leaks at 45 day follow ups. Clear inclusion and exclusion criteria were established. We identified ten studies eligible for inclusion. We carried out a meta-analysis of the relative odds on the basis of a random-effects model using the Mantel-Haenszel method for the major outcomes of bradycardia. Comprehensive Meta-Analysis Version 3 software was used for analysis.

Results: First Watchman 2.5 VS Watchman FLX data was compared, which favored Watchman FLX. Total 1027 watchman 2.5 and 688 Watchman FLX devices were compared. Next, Amulet vs Watchman 2.5 comparison favored Amulet with total number of devices 1091 and 1027 respectively. Next, Amulet vs Watchman FLX was compared which favored Amulet with total no. of devices 1093 and 688 respectively.

Conclusion: Though, more sample size and RCTs are required to make any strong conclusions, our study has shown Amulet is associated with fewer number of leaks compared to all the available devices at 45 day follow up.

INTRACARDIAC ELECTROGRAM OF COMMOTIO CORDIS

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Background: Experimental models have identified timing of the trauma-induced premature ventricular contraction with respect to the cardiac cycle as critical to the development of ventricular fibrillation in commotio cordis.