CARDBID COMPIRED TOMOGRAPHY DETECTING LEFT ATRIAL APPENDAGE THROMBI COMPARED WITH TRANSESOPHAGEAL ECHOCARDIOGRAPHY IN PATIENTS WITH ATRIAL FIBRILLATION. A META-ANALYSIS OF PROSPECTIVE TRIALS

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Background: Transesophageal echocardiogram (TEE) is considered the gold standard modality in detecting left atrial appendage (LAA) thrombi in patients with atrial fibrillation (AF). However, this is a semi-invasive procedure with potential life-threatening complications. Cardiac computed tomography (CCT) has been proposed as an alternative to evaluate this population.

Objectives: To evaluate the sensitivity, specificity, positive and negative predictive values (PPV/NPV) of CCT assessing LAA thrombi in comparison with TEE.

Methods: A systematic review of Medline, Cochrane, and Embase for all the prospective trials assessing detection of LAA thrombi by CCT in patients with AF prior to cardioversion (EC), ablation (PVI) or after ischemic stroke was performed using a bivariate meta-analytical model.

Results: A total of 12 studies of cardiac CT detecting LAA thrombi with 1725 patients (male: 71%, mean age 61 years) fulfilled the inclusion criteria. The overall incidence for LAA thrombi was 6.6% (n: 115). 9 studies were performed prior to PVI, 1 prior to EC and 4 studies after acute stroke. Most studies used 64-slide CT/1 mm thickness. The mean sensitivity and specificity were 97% and 93%, whereas the PPV and NPV were 60% and 99% respectively. Its diagnostic accuracy was 93%.

Conclusion: CCT provides excellent sensitivity, specificity and NPV in detecting LAA thrombi in patients with AF when compared with TEE. As expected it has a low PPV as a result of the low prevalence of LAA thrombi in the studied population.