A MULTICENTER STUDY OF 320 SLICE COMPUTED TOMOGRAPHY FOR THE DETECTION OF CORONARY ARTERY STENOSIS IN PATIENTS WITH CHRONIC ATRIAL FIBRILLATION: A COMPARISON WITH CONVENTIONAL CORONARY ANGIOGRAPHY

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Background: In evaluating coronary arteries by 64 slice CT, chronic atrial fibrillation (CAF) is usually an exclusion criterion. To evaluate diagnostic accuracy of 320 slice CT for detection of significant coronary artery stenosis in patients with CAF.

Methods: 53 consecutive CAF patients underwent both 320 slice CT and CAG within 3 months (43 male; 69 ± 9 yrs; CHADS2 score 2.2 ± 1.3; CHA2DS2-VASc score 3.5 ± 1.6) in two institutes. There were no cardiac events between the procedures. All CT and CAG data were analyzed at an analysis center by cardiologists blinded to the clinical data. Patients with >50% or >75% luminal stenosis on CT were compared to patients with >50% or >75% stenosis on CAG, respectively.

Results: In a patient by patient analysis, sensitivity, specificity, positive (PPV) and negative predictive value (NPV) of >50% stenosis on CT for predicting >50% stenosis on CAG were 75, 91, 92, and 70%, respectively, and those of >75% stenosis on CT for predicting >75% stenosis on CAG were 74, 93, 90, and 82%, respectively (prevalence of >50 and >75% on CAG were 60% and 43%, respectively). In a vessel by vessel analysis, sensitivity, specificity, PPV and NPV of >50% stenosis on CT for predicting >50% stenosis on CAG were 59, 91, 62, and 90%, respectively, and those of >75% stenosis on CT for predicting >75% stenosis on CAG were 64, 95, 64, and 95%, respectively.

Conclusion: 320 slice CT shows a relatively high diagnostic accuracy for the detection of significant coronary artery stenosis compared with CAG even in CAF subjects.