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Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

THE DEGREE OF LEFT ATRIAL FIBROSIS AS A POTENTIAL RISK FACTOR FOR STROKE: LESSONS LEARNED FROM CARDIAC MRI

Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 3:45 p.m.-4:30 p.m.

Session Title: Non Invasive Imaging: CMR and Myocardial Tissue Characterization
Abstract Category: 18. Non Invasive Imaging: MR
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Background: Cryptogenic embolic strokes of undetermined source (ESUS) are thought to comprise about 25% of all ischemic strokes. Late-Gadolinium MRI (LGE-MRI) allows detection and quantification of left atrial fibrosis (LA-fibrosis

Methods: A total of fifty patients (62% male, mean age 61.1±14.2 y) with TIA or stroke underwent LGE-MRI of the left atrium within 4 days after the event to assess the degree of atrial fibrosis. Brain-CT or MRI, TEE, ultrasound of the cerebral blood vessels and 24 hour ECG were performed in all patients.

Results: A total of 24 patients (48%) were specified with the diagnosis of ESUS, while a reason for the stroke event (AFIB, significant carotids stenosis, LAA-thrombus, persistent foramen ovale) was found in 26 patients (52%). The degree of LA-SRM was comparable in both groups (12.17±5.23 vs. 12.15%±5.46%; p=0.993; Figure 2). We also documented a similar degree of atrial fibrosis in patients presenting with AF (30%) when compared with patients without history of atrial arrhythmia, 12.26%±6.4% vs. 12.11±4.85, p=n.s, respectively (Figure 3).

Conclusion: Our preliminary data shown that the degree of left atrial fibrosis detected using LGE-MRI is comparable in patients with known and un-known (cryptogenic) source of stroke. This indicates that the amount of LA fibrosis plays an important role in the pathophysiology of stroke. Therefore, the assessment of left atrial changes with the help of MRI could be a new way of risk evaluation.

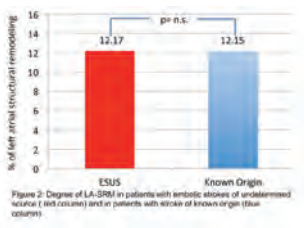

Figure 2: Degree of LA-SRM in patients with embolic strokes of undetermined source (red column) and in patients with stroke of known organ (blue column)

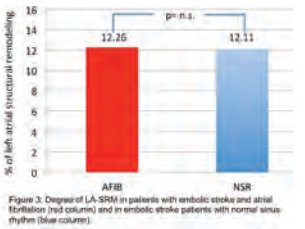

Figure 3: Degree of LA-SRM in patients with embolic stroke and atrial fibrillation (red column) and in embolic stroke patients with normal sinus rhythm (blue column).