Abstract: **P1068**

**Atrial appendage mechanics and superior vena cava area assessed by transoesophageal echocardiography in prediction of atrial fibrillation recurrence after pulmonary vein isolation**

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Pulmonary vein isolation (PVI) by catheter ablation is well established procedure for the treatment of paroxysmal atrial fibrillation (PAF). However, atrial fibrillation recurrence (AFR) is fairly common after the index PVI. Although there are numerous studies reflecting the AFR predictive factors, including different echocardiographic parameters, data on appendages' mechanics and superior vena cava's area is rather scarce. Hence, this study aimed to assess left (LAA) and right atrial appendage (RAA) mechanics by transoesophageal echocardiography (TEE) and to explore its value in prediction of AFR after PVI.

We conducted a single-centre, non-randomized, prospective cohort study. Consecutive patients undergoing PVI were included in a prospective registry. Patients with paroxysmal AF enrolled in the prospective Southeastern-Central Europe Pulmonary Vein Isolation (SECE-PVI) registry from our centre, in the period between January 2016 and June 2017, in whom the index PVI was performed using a point-by-point radiofrequency or 2nd-generation cryoballoon ablation were analysed. Transthoracic echocardiogram (TTE) and 3D TEE were obtained prior to the PVI procedure, and analysed offline in a standardized manner, including LAA strain and strain rate, LAA tissue Doppler imaging (TDI) velocity, LAA peak emptying velocity, LAA surface area, SVC surface area, RAA mean emptying velocity. The primary end point was freedom from any documented recurrence of atrial arrhythmia lasting > 30 seconds.

A total of 55 patients with PAF, in whom TTE and 3D TEE was done prior to index PVI, were included (median age 59 years; IQR 52-63; female 30%; BMI 27.9±4.3 kg/m2, LVEF 60%, LA volume index 34 mL/m2). After a median follow up of 12 (IQR 10-12) months, 15 patients had AFR (R-group) and 40 patients had no recurrence (NR-group). Compared to NR-group, patients in R-group had lower LAA TDI velocity (9.53±1.54 vs. 10.56±1.68 cm/s, p=0.014) and LAA surface area (2.55±0.62 vs. 2.84±0.66 cm², p=0.045). RAA TDI velocity (p=0.292) and SVC surface area (p=0.361 cm²), as well as the remaining LAA mechanic’s parameters, were not different between the study groups.

In conclusion, TEE parameters of RAA and SVC did not differ between patients with and without AFR. However, LAA TDI velocity and LAA surface area could be useful in follow-up of PAF after index PVI in clinical settings. To our knowledge, this is the first study assessing RAA’ mechanics and SVC surface area in predicting AFR after PVI.