Abstract: **P1040**

**Acute efficacy of contiguous versus discontiguous point-by-point radiofrequency energy isolation of pulmonary veins in patients with paroxysmal atrial fibrillation: a randomized study**

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Background: Durable pulmonary vein (PV) isolation (PVI) determines the clinical success of catheter ablation for atrial fibrillation (AF). Secondary analysis of EFFICAS-II study suggested that contiguity of radiofrequency (RF) lesions resulted in more durable PVI. In the randomized study, we investigated whether completely discontiguous deployment of ablation lesions adversely affected the acute efficacy of PVI.

Methods: Thirty-six consecutive drug-refractory paroxysmal AF patients (aged 59±11, 58% males) were randomized 1:1 to either discontiguous (D-PVI) or contiguous (C-PVI) encircling point-by-point lesions around ipsilateral PV. A contact force sensing catheter targeting a final interlesion distance (ILD) < 6mm and ablation index 400-450 (for anterior wall) and 300-350 (for posterior wall) was used. Study endpoint was defined as failure of first-pass PVI or acute PV reconnection during minimum 30 minutes of waiting time followed by adenosine challenge. This was analysed in per-PV-circle fashion.

Results: Three operator from 2 centres were involved in the study. Clinical characteristics of patients did not differ between the groups. Total RF time was comparable in D-PVI vs C-PVI group (1681±366 vs 1758±485 seconds, p=0.59). The mean and maximum ILD was higher in D-PVI vs C-PVI group (5.2±0.5 vs 4.8±0.5, p=0.001 and 8.2±1.7 vs 7.5±0.9, p=0.05, respectively). First-pass PVI failed in none of PV-circles in the D-PVI group and in 2 PV-circles in the C-PVI group. During the 30-minute waiting time, one PV-circle reconnection was observed after adenosine testing in the D-PVI group and two spontaneous PV-circle reconnections occurred in the C-PVI group. Total endpoint rates were 1/36 (3%) vs 4/36 (11%), p=0.34 in the D-PVI vs C-PVI groups.

Conclusions: Discontiguous deployment of RF lesions is not associated with lower procedural PVI efficacy when strict guidelines are applied for interlesion distance and ablation index. Development of oedema around each ablation site does not prevent effective lesion formation at adjacent positions.