

## Empirical superior vena cava isolation in patients undergoing redo-catheter ablation procedure after recurrence of atrial fibrillation

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**Background/Introduction:** Extra pulmonary vein (PV) foci may trigger AF recurrence after an initially successful PVI. Superior vena cava (SVC) catheter ablation (CA) may therefore offer a treatment target in order to improve success rates.

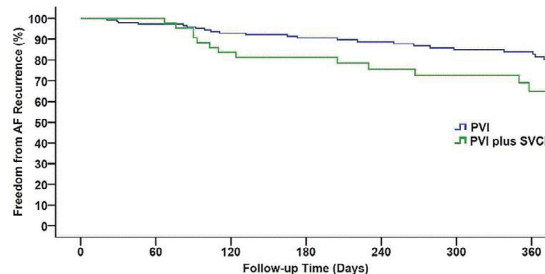
**Purpose:** The purpose of this study was to evaluate the potential benefit of empirical SVC isolation in addition to PVI in patients undergoing a second CA after index PVI.

**Methods:** We retrospectively analyzed consecutive patients scheduled for a second CA because of a recurrence of symptomatic AF. Redo-CA was performed with a 3D electroanatomic mapping system and point-by-point ablation using RF energy in the range between 25 W and 30 W. In case of persistent isolation of all PVs, only SVCI was performed. In case of reconnection of vein(s), a wider antral re-isolation was performed. Redo-PVI (PVI-group) or Redo-PVI plus SVC isolation (SVCI) (PVIplusSVCI-group) were performed at the discretion of the operator. No additional targets were allowed. The endpoint of all procedures was elimination of the PV signals confirmed by a circular mapping catheter at the level of the PV ostium and

elimination of all signals in the SVC in case of SVCI. Recurrence of AF during a follow-up of 12 months is presented.

**Results:** We analyzed 191 patients (age  $61 \pm 10$  years, 30% female, BMI  $27 \pm 5$  kg/m<sup>2</sup>, LVEF  $56 \pm 9\%$ , PLAX  $41 \pm 7$  mm, paroxysmal 61%). Whereas 148 (78%) patients underwent Redo-PVI only, 31 patients (16%) underwent PVI plus SVCI, and in 12 patients (6%) SVCI only was performed. Baseline characteristics did not differ significantly between the two groups. In the PVI-group, 79% were recurrence-free compared to 65% (see Kaplan-Meier curve: log rank  $p=0.011$ ) in the PVIplusSVCI-group. The RF time of the PVI group focusing on the wide antral re-isolation of vein(s) was significantly higher than for the PVIplusSVCI-group ( $819 \pm 494$  s versus  $458 \pm 444$  s;  $p < 0.001$ ).

**Conclusion:** Additional empirical SVCI at redo-PVI in patients with symptomatic AF recurrence does not lead to an increase in freedom from AF recurrence. Focusing on an additional "wider antral" re-isolation may be more effective.



Kaplan-Meier Survival Curves for Recurrence