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Abstract: 406

Validation of PV isolation of multi-electrode duty cycled radiofrequency ablation in patients with paroxysmal and persistent atrial fibrillation

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Catheter ablation (Atrial Fibrillation)

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Purpose: A novel multi-electrode catheter (PVAC) combining circular mapping and duty cycled multi-electrode radiofrequency energy delivery has been developed to map and isolate the pulmonary veins (PVs). The aim of this study was to validate the isolation of the PVs using a standard circular mapping catheter.

Methods: 102 consecutive patients, age 57.9±9.6 years, with paroxysmal or persistent drug refractory AF were referred for ablation. All pts had documented AF episodes with an AF duration of 9.3±7.5 years (range 1.5-25).

Results: The total procedure time was 117±55 min (65 to 204). In 5 pts additional ablation using conventional RF catheter ablation was necessary. The mean RF ablation time required to achieve complete PV isolation was 31±8 min (range 16-51). Isolation of the PVs was confirmed using a standard circular mapping catheter. In 8 pts with persistent AF additional ablations were performed to defragmentate septal and posterior part of the left atrium. At the latest follow up 73% of the patients were in sinus rhythm.

Conclusions: 1] This novel technique can be used safely for PV isolation and LA ablation, 2] The success rate for PV isolation was 100% using the PVAC alone and confirming isolation with a standard circular mapping catheter and 3] the PVAC is more effective in smaller PVs compared to pulmonary veins with a diameter >25 mm and 4] Larger studies are required to evaluate the whether the PVAC is associated with a different complication rate compared with standard PV isolation.