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Abstract: 385

Longterm results of multi-electrode pulmonary vein isolation with bipolar/unipolar RF energy for paroxysmal AF

Authors:

A.A.W. Mulder¹, M.C.E.F. Wijffels¹, E.F.D. Wever¹, L.V.A. Boersma¹, ¹St Antonius Hospital - Nieuwegein - Netherlands,

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Purpose: PV isolation for AF has varying reported success rates with complex and lengthy procedures. We evaluated the long term efficacy of a novel ringshaped ablation catheter using alternating unipolar and bipolar RF energy

Methods: Consecutive pts that were referred for ablation of paroxysmal or persistent AF were included after MRI and TEE showed no significant structural disease. A circular decapolar catheter, 3 mm electrodes and spacing, 25 mm diameter (PVAC) was used for mapping and ablation in each PV antrum. Each application lasted 60 sec at 60°C with a 4:1 ratio of duty-cycled bipolar to unipolar RF energy at a maximum power of 8W until PV isolation was achieved in all veins. Follow-up was performed at 3, 6, and 12 mo with ECG and 7-day Holter recording. Symptomatic pts received additional event recording. In selected pts MRI was repeated after 6 mo. Complications including stroke, bleeding, tamponade, hematoma, and phrenic nerve damage were assessed.

Results: Since March 2007, 142 pts (age 59±11, 27 female) underwent a Lasso or PVAC verified PV isolation, for all but 1 PV that could not be reached. Procedure and fluoroscopy time decreased from 95±26 to 74±21 min and 19±9 to 15±7 min from the first to the last 50 pts. PVAC applications decreased from 29±7 to 25±7 min. Longterm follow-up beyond 12 mo could be performed in the first 41 pts. Seventeen pts were using drugs, and in 13 pts (31%) AF recurrence was documented with either ECG, Holter, or event recorder. One failure was the pt where 1 PV was not isolated. In 4 of 13 pts recurrence was due to renewed persistent AF requiring cardioversion. After cardioversion 2 of these pts became asymptomatic again with no new recurrence, while 2 others had a second ablation procedure. A 7-day Holter at 12 mo showed absence of AF in 26/33 pts (79%). In 2 pts a second procedure was performed, showing reconnection of 1-4 PVs. No late complications were observed. MRI follow-up or angiography during a second procedure showed no evidence for PV stenosis.

Conclusions: PV isolation with PVAC ablation is feasible, efficient, and safe. Longterm FU shows 79% freedom of LA arrhythmia for paroxysmal AF.

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