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## **P1621 : Duty-cycled, unipolar-bipolar RF ablation via multi-electrode catheter in patients with paroxysmal atrial fibrillation**

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**Topic(s):**

Catheter ablation

**Citation:**

European Heart Journal ( 2009 ) 30 ( Abstract Supplement ), 270

**Introduction:** Techniques for catheter ablation of atrial fibrillation (AF) continue to improve, but often require complex equipment, high level of operator skill, and a long learning curve.

**Methods:** To simplify AF ablation, we investigated a system featuring a multi-channel radiofrequency (RF) generator that simultaneously delivers duty-cycled, bipolar-unipolar energy to operator selectable electrodes of a decapolar circular catheter (PVAC, Ablation Frontiers) for achieving pulmonary vein (PV) isolation via antrum ablation. RF was delivered in a temperature-controlled manner to achieve a target of 55-60 C° with power limited to 10W per electrode. PV angiography was performed to facilitate identification of the PV ostium. End-points are disappearance of all PV potentials and electrical isolation of the PVs as verified by use of a circular mapping catheter.

**Results:** Since Sept. 2007 we have treated 45 patients with paroxysmal AF, aged 60±9 years, using this technique. Average number of RF applications per PV was 7±3. Procedure time was 92±16 min and fluoroscopy time was 19±9 min. CT/MRI performed pre-procedure and at 2-4 months follow up ruled out asymptotic PV stenosis. No other complications were observed. 29 of the patients have had ≥ 5 months follow up. Holter monitoring demonstrated freedom of AF in 17/29 (59%) patients and significant reduction of AF burden (>90% reduction) in 9/29 (31%) patients. Thus, total effective rate after a single procedure was 90% (26/29 patients), though 17 of them (58%) are still on antiarrhythmic drugs.

**Conclusion:** This single-catheter method is safe, efficient, and feasible for AF ablation and has early results comparable to those of widely reported techniques. In addition, simplified catheter manipulation, shorter learning curve, shorter procedure time and independence from 3D-mapping system may make the method available to a larger number of centers.