

Audit

A Clinical Audit of Pulmonary Vein Isolation with Percutaneous Balloon Cryoablation in Refractory Atrial Fibrillation

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Objectives

Pulmonary vein isolations is the conventional rhythm-control therapy in treatment-resistant Atrial Fibrillation (AF). Cryoablation has emerged as a successful therapeutic option as it confers a beneficial effect on procedure time without compromising safety and efficacy due to its single-shot circumferential approach without conduction gap [1], in contrast to the conventional point-by-point application of radiofrequency energy [2]. This audit aimed to determine the clinical effectiveness of novel 28 mm cryoballoon ablation in Pulmonary Vein Isolations (PVI) measured by freedom from AF from patients perspectives.

Methods

A total of 102 consecutive patients, aged 59.0 + 10.4 with paroxysmal (n=73) and persistent AF (n=29) at Aberdeen Royal Infirmary who underwent de-novo PVI between January 2012 and January 2019 were enrolled. All data was collected retrospectively via an anonymous catheter ablation database. Men and women constitute 76.5% and 23.5% of the study population respectively.

Results

Primary outcome is AF recurrence, defined as AF >30 seconds including initial blanking period of 3 months while secondary outcome is freedom from AF. Despite recurrence rate of 59/102 (57.8%), 12-month freedom from AF was reported in 52.9% patients and 24-month AF freedom in 69.6% patients after single cryoablation. 19

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patients had repeat ablation with radiofrequency approach within 24 months after single cryoablation. AF persists in 12 patients. 88.2% procedures were complication-free (Table 1).

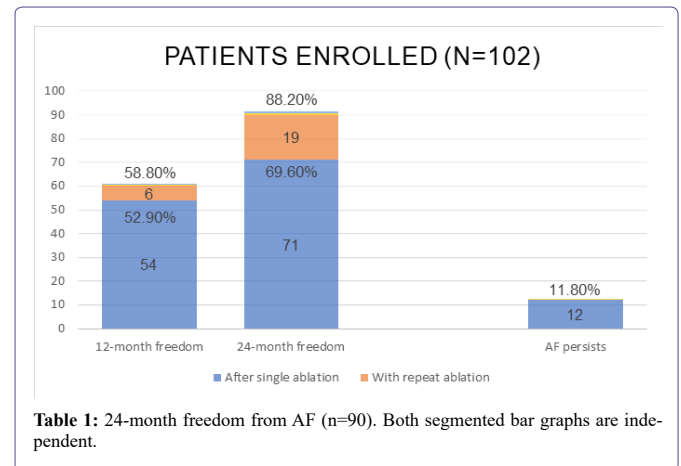


Table 1: 24-month freedom from AF (n=90). Both segmented bar graphs are independent.

Conclusion

PVI with percutaneous balloon cryoablation are an established therapy, attributed to its safety and clinical efficacy. A substantial proportion of patients experienced tremendous improvement in quality of life after single cryoablation and with further intervention during follow-up. This is justified by high incidence of 24-month freedom from AF.

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