Evaluating long-term outcomes of left atrial appendage occlusion: the results of a prospective single-center registry

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Background

Percutaneous left atrial appendage occlusion is an emerging alternative to anticoagulation in the prevention for stroke in patients with atrial fibrillation, especially in patients with a contra-indication for oral anticoagulation therapy. Long-term results on the efficacy and safety of this treatment remain scarce.

Methods

In this single-center prospective registry, data of all consecutive patients that underwent percutaneous left atrial appendage closure between 2009 and 2019 were collected. Patients with successful left atrial appendage closure (peri-device leakage ≤5mm) and at least one year of follow-up data were analyzed. The occurrence of thrombo-embolic events (ischemic stroke, TIA and systemic embolism), major bleeding events (BARC >2) and anticoagulation use during long-term follow-up were evaluated.

Results

A total of 192 patients after left atrial appendage occlusion were included (61 % male, age 69.0 ± 8.4 years, CHA2DS2-VASc 4.0[3.0-5.0], HAS-BLED 3.0[2.0-3.25]) with a mean follow-up duration of 5.7 ± 2.8 years (in total 1087 patient-years). During follow-up 36 patients (19%) died. 49 thrombo-embolic complications were observed in 38 patients. The ischemic stroke rate was 1.9 events per 100 patient-years, accounting for a 70% reduction compared to CHA2DS2-VASc predicted rate. Device-related thrombus (DRT) occurred in 5 patients (2.6%), 3 were observed during routine follow-up and were not associated with thrombo-embolic complications. The other 2 DRT were observed in patients presenting with ischemic stroke more than 3 years after device implantation. Furthermore, 38 non-procedural major bleeding complications occurred in 19 patients, resulting in 3.5 events per 100-patients years, accounting for a reduction of 43% compared to estimated bleeding rates under OAC use. At the end of the study 71% of all patients were on single antiplatelet or no antiplatelet/anticoagulation treatment at all.

Conclusions

During long-term follow-up thrombo-embolic event rates and non-procedural major bleeding rates were consistently low (ischemic stroke rate reduction 70% and non-procedural major bleeding rate reduction 40% compared to predicted rates). These results confirm the efficacy of left atrial appendage occlusion.

Abstract Figure. Ischemic stroke rates