

Impact of atrial fibrillation pattern on left atrial appendage closure: insights from the prospective LAARGE registry

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Background: Non-paroxysmal (NPAF) forms of atrial fibrillation (AF) have been reported to be associated with an increased risk for systemic embolism or death compared with paroxysmal AF (PAF). This study investigates the procedural safety and long-term outcomes of left atrial appendage closure (LAAC) in patients with different forms of AF.

Methods: Comparison of procedural details and long-term outcomes in patients (pts) with PAF against controls with NPAF in the prospective, multicentre observational registry of patients undergoing LAAC in Germany (LAARGE).

Results: A total of 638 pts (PAF 274 pts, NPAF 364 pts) were enrolled. NPAF consisted of 31.6% patients with persistent AF and 68.4% with longstanding persistent AF or permanent AF. In both groups, a history of PVI was rare (4.0% vs 1.6%, $p = 0.066$). The PAF group had significantly less history of heart failure (19.0% vs 33.0%, $p < 0.001$) while the current median LVEF was similar (60% vs 60%, $p = 0.26$). The total CHA₂DS₂-VASc score was lower in the PAF group (4.4 ± 1.5 vs 4.6 ± 1.5 , $p = 0.033$), but no difference in the HAS-BLED score (3.8 ± 1.1 vs 3.9 ± 1.1 , $p = 0.40$) was observed. The rate of successful implantation was equally high (97.4% vs 97.8%, $p = 0.77$) in both groups. In the three-month echo follow-up, device-related thrombi (2.1% vs 7.3%, $p = 0.12$) and peridevice leak >5 mm (0.0% vs 7.1%, $p = 0.53$) were numerically higher in the NPAF group. Overall, in-hospital complications occurred in 15.0% of the PAF cohort and 10.7% of the NPAF cohort ($p = 0.12$). In the one-year follow-up, unadjusted mortality (8.4% vs 14.0%, $p = 0.039$) and combined outcome of death, stroke and systemic embolism (8.8% vs 15.1%, $p = 0.022$) were significantly higher in the NPAF cohort. After adjusting for CHA₂DS₂-VASc and previous bleeding, NPAF was associated with increased death/stroke/systemic embolism (HR 1.67, 95%-CI: 1.02-2.72).

Conclusion: Atrial fibrillation type did not impair periprocedural safety or in-hospital MACE of patients undergoing LAAC. However, after one year, NPAF was associated with higher mortality and combined outcome of death, stroke and systemic embolism.