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Concomitant pulsed-field ablation pulmonary vein isolation and left atrial appendage occlusion: experience from University Hospital Centre Zagreb

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Introduction: Transcatheter left atrial appendage occlusion (LAAO) is a stroke-prevention strategy for patients with atrial fibrillation (AF) at increased thromboembolic risk who have contraindications to long-term oral anticoagulation (OAC) or a high risk of bleeding[1]. Increasingly, LAAO is combined with pulmonary vein isolation (PVI) in a single session, commonly referred to as a "one-stop" procedure. The introduction of pulsed field ablation (PFA) has further facilitated this combined approach[2]. The aim of this study was to describe the clinical characteristics and acute procedural outcomes of patients undergoing concomitant PFA-based PVI and LAAO at our centre.

Patients and Methods: This single-centre, retrospective observational study included all patients who underwent concomitant PFA-based PVI and LAAO using the WATCHMAN device at University Hospital Centre Zagreb between August 2024 and October 2026. Data were retrospectively collected from electronic medical records. Periprocedural adverse events were assessed through hospital discharge.

Results: A total of 21 patients (61.9% male; mean age 71.3 ± 7.6 years; mean CHA-DS-VASc score 4.1 ± 1.5; mean HAS-BLED score 1.9 ± 0.7) were included. Patient characteristics and risk factors are summarized in **Table 1**. Comorbidities included hypertension (95%), dyslipidemia (90%), chronic kidney disease (52%), heart failure (52%), coronary artery disease (33%), and diabetes mellitus (24%). A history of clinically significant bleeding was documented in 12 patients (57.1%), including gastrointestinal bleeding in nine, hematuria in two, and intracranial bleeding in one. Acute PVI was successful in all 21 patients (100%), while WATCHMAN implantation was successful in 20 (95.2%). In one patient, LAAO was unsuccessful due to unfavorable left atrial appendage anatomy. Procedural characteristics are summarized in **Table 2**. During the index hospitalization, access-site hematomas >5 cm occurred in two patients (9.5%). No pericardial effusion, cardiac tamponade, procedure-related stroke, or device embolization was observed.

Conclusion: Our single-centre experience demonstrates the feasibility of concomitant PFA-based PVI and WATCHMAN LAAO, with high rates of acute procedural success and few observed periprocedural adverse events.

TABLE 1. Patient characteristics and risk factors.

Male, N (%)	13 (62)
Age, years	71.3 ± 7.6
BMI, kg/m2	29.2 ± 4.1
LVEF, %	57.8 ± 9.3
Prior TIA/stroke, N (%)	4 (19)
Prior major bleeding, N (%)	12 (57)
CHADSVASc	4.1 ± 1.5
HASBLED	1.9 ± 0.7

BMI, body mass index; LVEF, left ventricular ejection fraction; TIA, transitory ischemic attack

TABLE 2. Procedure characteristics.

Procedure time, min	68.3 ± 19.3
Fluoroscopy time, min	11.5 ± 3.2
Radiation dose, mGy	244 (70–596)
Dose area product, µGy/m²	1971 (958–3400)
Contrast agent, ml	35 (16–105)

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