Efficacy and safety of outpatient clinic-based elective external electrical cardioversion in patients with atrial fibrillation

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Introduction: There is little known about the outcome of outpatient-based elective external cardioversion (ECV) in patients with longstanding persistent atrial fibrillation (L-PeAF) or persistent AF after AF catheter ablation (AFCA).

Methods: We included 1718 patients who underwent outpatient-based elective ECV (74% male, 61.1±11.0 years old, 90.9% longstanding PeAF, 9.1% after AFCA), and evaluated ECV failure rate, complication rate, and recurrence rates, after excluding the patients with atrial tachycardia, inappropriate antiarrhythmic drug (AAD) medication, or emergency ECV. Sequential biphasic shocks were delivered until successful cardioversion (70-100-150-200J). If ECV failed at 150J, we administered intravenous amiodarone 150mg and delivered 200J. We checked ECG at 2 weeks after ECV, 24-hour Holter 3 months later, and every 6 months thereafter, unless patient recurred AF.

Result: ECV failure rate was 11.4%, and complication rate was 0.46%. ECV energy was significantly higher in patients with L-PeAF ECV than in those after post-AFCA (p<0.001). Within 3-months, 44.7% recurred as sustaining AF, 10.8% patients recurred as paroxysmal AF, and 44.5% remained in sinus rhythm. AF duration (OR 1.01[1.00-1.02], p=0.005) and amiodarone user (OR 0.45[0.27-0.75], p=0.002) were independently associated with AF recurrence within 3 months. After 3-months maintenance of sinus rhythm, amiodarone users (log rank p=0.007) showed significantly lower AF recurrence rates during 39.3±32.7 months follow-up.

Conclusion: Success rate of outpatient based elective ECV was 88.6% with low complication rate, but 55.5% of them recurred AF within 3 months. Both short-term and long-term AF recurrence was significantly lower in patients with amiodarone users.