

Embolic complications of direct current cardioversion of atrial arrhythmias: association with low intensity of anticoagulation at the time of cardioversion

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Date: 2002

Abstract:

The goal of this study was to identify the factors responsible for embolic complications of direct current (DC) cardioversion of atrial arrhythmias. Direct current cardioversion of atrial fibrillation (AF) carries a risk of thromboembolism, which is reduced, but not eliminated, by anticoagulation. The risk of embolism after conversion of atrial flutter is believed to be lower. No series to date has included enough patients receiving anticoagulants or enough patients with atrial flutter to estimate the risk in these groups. We reviewed the case records of 1,950 patients who underwent 2,639 attempts at DC cardioversion. Cardioversion was performed within two days of the apparent onset of the arrhythmia in 443 episodes, 352 without subsequent prolonged anticoagulation with one embolic complication. Cardioversion was preceded by warfarin therapy for ≥ 3 weeks in 1,932 instances. No embolic complication occurred in 779 attempts performed with an international normalized ratio (INR) of ≥ 2.5 (95% confidence limits 0% to 0.48%). Of 756 cases in which the INR was < 2.5 or was not measured before conversion, nine were complicated by thromboembolism. Embolism was significantly more common at an INR of 1.5 to 2.4 than at an INR ≥ 2.5 (0.93% vs. 0%, $p = 0.012$). The incidence of embolism after conversion of atrial flutter or tachycardia was similar to that after cardioversion of AF (0.72% vs. 0.46%, $p = \text{NS}$). The INR should be ≥ 2.5 at the time of cardioversion if the duration of AF is uncertain or > 2 days. Cardioversion of atrial flutter presents similar risks and requires similar anticoagulation.