

Predictors of typical atrial flutter recurrence following radiofrequency ablation of cavotricuspid isthmus using externally irrigated-tip catheters

Short title: **Recurrence of atrial flutter after ablation**

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Introduction: Identification of risk factors for the recurrence of atrial flutter (R-AFL) after radiofrequency (RF) catheter-ablation (CA) may provide better patient selection for invasive treatment and optimal postprocedural treatment. We investigated the incidence, time frame of R-AFLs and predictors of R-AFLs after CA.

Methods: We retrospectively analysed the patients undergoing externally irrigated RF-CA (30-50W) for typical AFL and with end-point of isthmus-block during 7-year period. The patient follow-up visits consisting of ECG and 24h-Holter were scheduled at 6-month intervals after the procedure.

Results: Total of 248 patients (mean age 57.4±11.6 years, 72.6% male) underwent 303 RF-CAs. The procedure was repeated in 45 patients (1-4 times per patient). Primary CA success rate was 87%. During the follow-up of 17.6±14.7 months, 22.6% and 5.7% of patients had R-AFL following the first and the last procedure, respectively. The mean time from CA to RAFL was 8.1±6.4 months (1 day to 33 months). The majority of R-AFL (72.7%) occurred in the first year post procedure. On univariate analysis, R-AFL was significantly associated with age, P-wave amplitude, hyperlipidemia, left atrial diameter, fluoroscopy time, achievement of isthmus-block, use of analgesedation and operator's experience. Multivariable analysis demonstrated that age (HR: 0.95), stable isthmus-block (HR: 0.22) and hyperlipidemia (HR: 2.00) were independent predictors of R-AFL.

Conclusion: R-AFL rate after final RF-CA was about 6%, but procedure was repeated in every fifth patient. R-AFL mostly occurred during the first postprocedural year. The R-AFL predictors after RFCA were younger age, hyperlipidemia and incomplete isthmus ablation.

Key Words: atrial flutter; catheter-ablation; cavo-tricuspid isthmus; recurrence after ablation.