Chronic Heart Rate Increase after Pulmonary Vein Isolation can Predict the Recurrence in Patients with Paroxysmal Atrial Fibrillation

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Introduction: The relation between chronic heart rate (HR) change and recurrence of atrial fibrillation (AF) after pulmonary vein isolation (PVI) was not fully understood, which was the reason to examine in this study.

Methods: We retrospectively examined 84 consecutive cases of paroxysmal AF who performed first PVI procedure from April 2015 to March 2016. HR of electrocardiograms (ECGs) were recorded at the time of admission. Also, HRs of ECGs at 1, 3 and 6 months after the session were averaged. Both HRs were compared and checked the relation between the recurrences of AF for 6 months after the session.

Result: Cases categorized to group-A: HR increased more than 20% (30 cases: 35.7% of all cases), group-B: HR increased more than 10 to 20% (24 cases: 28.6%), group-C: HR increased from 0 to 10% (16 cases: 19.0%), group-D: HR decreased from 0 to 10% (13 cases: 15.5%), group-E: HR decreased more than 10% (1 case: 1.2%). AF recurred within 3 months were 10 cases (11.9% of all cases): 5 cases in group-A (6.0%), 2 cases in group-B (2.4%), 1 case in group-C (1.2%), 2 cases in group-D (2.4%) and no case in group-E. AF recurred from 3 to 6 months were 6 cases (7.1% of all cases): 5 cases in group-A (6.0%), 1 case in group-B (1.2%) and no case in group-C, D and E.

Conclusion: The recurrence of AF after 3 months of PVI procedure have relation to chronic HR increase after the procedure. Also, it is suggested that the recurrence of AF is low when chronic HR decreased after the procedure.