

Evaluation of Cardiac Rhythm Patterns after Open Surgical Maze-Procedures from Three Years' Experiences in a Single Heart Center

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Abstract : In order to optimize the efficacy of medications, the regular follow-up with long-term continuous monitoring of heart rhythmic patterns has been facilitated since clinical introduction of cardiac implantable electronic monitoring devices (CIMD). Extensive analysis of rhythmic circadian properties is capable to disclose the distributions of arrhythmic events, which may support appropriate medication according rate-/rhythm-control strategy and minimize consequent afflictions. 348 patients (69 ± 0.5 ys, male 61.8%) with predisposed atrial fibrillation (AF), undergoing primary ablating therapies combined to coronary or valve operations and secondary implantation of CIMDs, were involved and divided into 3 groups such as PAAF (paroxysmal AF) (n=99, male 68.7%), PEAf (persistent AF) (n=94, male 62.8%), and LSPEAF (long-standing persistent AF) (n=155, male 56.8%). All patients participated in three-year ambulant follow-up (3, 6, 9, 12, 18, 24, 30 and 36 months). Burdens of atrial fibrillation recurrence were assessed using cardiac monitor devices, whereby attacks frequencies and their circadian patterns were systemically analyzed. Anticoagulants and regular anti-arrhythmic medications were evaluated and the last were listed in terms of anti-rate and anti-rhythm regimens. Patients in the PEAf-group showed the least AF-burden after surgical ablating procedures compared to both of the other subtypes ($p < 0.05$). The AF-recurrences predominantly performed such attacks' property as shorter than one hour, namely within 10 minutes ($p < 0.05$), regardless of AF-subtypes. Concerning circadian distribution of the recurrence attacks, frequent AF-attacks were mostly recorded in the morning in the PAAF-group ($p < 0.05$), while the patients with predisposed PEAf complained less attack-induced discomforts in the latter half of the night and the ones with LSPEAF only if they were not physically active after primary surgical ablations. Different AF-subtypes presented distinct therapeutic efficacies after appropriate surgical ablating procedures and recurrence properties in sense of circadian distribution. An optimization of medical regimen and drug dosages to maintain the therapeutic success needs more attention to detailed assessment of the long-term follow-up. Rate-control strategy plays a much more important role than rhythm-control in the ongoing follow-up examinations.

Keywords : atrial fibrillation, CIMD, MAZE, rate-control, rhythm-control, rhythm patterns

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