

Clinical impact of continuous electrical monitoring in patients with arrhythmic myocarditis: a prospective cohort study

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Background: Although potentially life-threatening, arrhythmias in myocarditis are under-reported.

Purpose: To assess diagnostic yield and clinical impact of continuous arrhythmia monitoring (CAM) in patients with arrhythmic myocarditis.

Methods: We enrolled consecutive adult patients (n=104; 71% males, age 47±11y, mean LVEF 50±13%) with biopsy-proven active myocarditis and de novo ventricular arrhythmias (VA). All patients underwent prospective monitoring by both sequential 24-hour Holter ECGs (4/y in the first year; 2/y in years 2–5; 1/y later) and CAM, including either ICD (n=62; 60%) or loop recorder (n=42; 40%).

Results: By 3.7±1.6 y follow-up, 45 patients (43%) had VT, 67 (64%) NSVT, and 102 (98%) premature ventricular complexes (PVC). As compared to Holter ECG (average 9.5 exams per patient), CAM identified more

patients with VA (VT: 45 vs. 4; NSVT: 64 vs. 45; both $p<0.001$), more VA episodes (VT: 100 vs. 4%; NSVT: 91 vs. 12%), and earlier NSVT timing (median 6 vs. 24 months, $p<0.001$). Conversely, Holter ECG allowed VA morphology characterization and daily PVC quantification. The time to first treatment modification was 12±9 months by CAM vs. 33±16 months by Holter ECG ($p<0.001$), and drug withdrawal was always CAM-dependent. Guided by CAM findings, 8 patients (8%) started anticoagulants for newly-diagnosed atrial arrhythmias. Differently from ICDs, loop recorders did not interfere with the interpretation of cardiac magnetic resonance.

Conclusion: In patients with arrhythmic myocarditis, CAM allowed accurate arrhythmia detection and showed a considerable clinical impact. As a complementary exam, VA characterization and PVC burden were better assessed by repeated Holter ECGs.