Long-term impact of transient atrioventricular block during atrioventricular nodal re-entrant tachycardia ablation

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Introduction: Ablation of atrioventricular nodal re-entrant tachycardia (AVNRT) is an extremely safe procedure, being complete atrioventricular (AV) block the most feared complication. Transient AV or ventriculoatrial (VA) block during ablation is considered a risk marker of immediate AV permanent block.

Purpose: To study whether TB (transient block) during AVNRT ablation is associated with a higher risk of AV permanent block and pacemaker implantation during long term follow-up.

Methods: Retrospective analysis of all patients who underwent ablation for AVNRT in our center and had a minimum five years follow-up. Patients carrying a cardiac pacing device were excluded. Data was extracted from electronic medical records and follow-up was performed by telephone contact. TB was defined as AV or VA loss of conduction of at least 1 beat during energy delivery.

Results: We included 689 patients who underwent AVNRT ablation from March 1995 to December 2015: mean age 52.6 ± 18.6 years; 240 (34.8%) male; 677 radiofrequency and 12 cryotherapy ablations. TB was observed in 106 (15,4%) patients. Baseline characteristics are described in Table 1. Within the TB group, 44 (41.5%) patients presented with AV block, 60 (56.6%) with VA block, and 2 patients presented with both. TB concerned more than one beat in 65 (61.9%) cases and persisted after cessation of energy delivery in 15 (14.2%) cases. Two patients did not recover AV conduction, requiring pacemaker implantation before discharge.

During a median 12.5 years follow-up (IQR 9.5-16.6), 3 of the remaining 104 TB patients required pacemaker implantation due to AV block. All 3 had presented AV TB and had undergone radiofrequency ablation; they were not significantly older (67.0 ± 9.3 vs 48.8 ± 19.8, p = 0.12) but presented longer basal PR (237.0 ± 115.2 vs 152.6 ± 26.5, p < 0.001) and HV (57.3 ± 6.7 vs 44.2 ± 7.6, p = 0.004) intervals. When compared to the non-TB group, there were no differences in pacemaker implantation due to AV block during follow-up (7 (1.2%) p = 0.19). However, median time to pacemaker implantation was shorter in TB patients than in non-TB: 0.7 [0.1-1.4] vs 13.7 [5.2-22.0], p = 0.02.

Conclusion: Long term incidence of permanent AV block did not differ between TB and non-TB groups, however AV block occurred significantly earlier in TB patients.

	Non-TB group(n = 583)	TB group(n = 106)	p
Age (mean ± SD)	53.2 ± 18.3	49.3 ± 19.8	0.05
PR (mean ± SD)	153.0 ± 28.4	155.0 ± 33.8	0.54
AH (mean ± SD)	83.3 ± 23.6	82.1 ± 22.2	0.64
HV (mean ± SD)	44.4 ± 7.8	44.6 ± 7.9	0.76