

P wave duration and morphology in patients undergoing cryoablation for atrial fibrillation

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Atrial fibrillation (AF) develops in diseased atrial myocardium which can be characterized by interatrial conduction abnormalities. The cryoablation performed for pulmonary vein isolation (PVI) can prevent AF recurrences.

The purpose of the study is to characterize an unselected group of AF patients undergoing PVI in terms of interatrial conduction abnormalities.

The study population included 118 patients (47 F, 71 M), aged 67 years. The patients were divided into 2 subgroups (76 paroxysmal and 42 persistent AF). In patients with persistent AF, the sinus rhythm was established by electrical cardioversion. P wave duration (PWD) was measured using an electrophysiological system with assessment of the presence of incomplete or complete interatrial block. The P wave resulted from a pacemaker in 6 of the patients and was not further assessed.

The average PWD was 167 ± 2.4 ms and did not deviate significantly in paroxysmal (165.7 ± 2.4 ms) and persistent AF (169.7 ± 2.3 ms). There were significant differences in the presence of Bachmann's bundle (BB) block, which we divided into three categories. While category one without BB block consisted of younger patients (57 on average) and made up 19,6% of the study group, category two listed those with intermediate block (67 on average) made up 37,7% and those with complete BB block (70 on average) made up 42,6%.

Additionally, the statistical analysis suggests a significant correlation between the patient's age and a prolonged PWD ($p < 0.05$).

Conclusions:

1. The patients undergoing cryoablation show a significant degree of interatrial conduction abnormalities.
2. The form of the arrhythmia (paroxysmal vs. persistent) seems to not influence those disorders.
3. Advanced age correlates with pronounced interatrial conduction delays, seen by prolonged PWD.

