

P wave duration and interatrial conduction abnormalities in paroxysmal and persistent typical atrial flutter.

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Introduction: Functional and structural changes, the enlargement of the right atrium and the slowing of the conduction in the cavotricuspid isthmus are the background for the development of typical atrial flutter (AFL). These changes in ECG are manifested in the morphology of the initial part of the P wave. The damage within the right atrium may contribute to the presence of interatrial conduction disturbances, which are responsible for the final part of the P wave

Material and methods: The study population consisted of 131 patients diagnosed with AFL, 38 women and 93 men aged 66 years (60-72), divided in 62 patients with paroxysmal and 69 with persistent AFL. In this group the RF ablation of the cavotricuspid isthmus resulted in restoration of sinus rhythm (AFL group). As the exact duration of the arrhythmia episodes was not possible to recollect, we only included the patients with persistent AFL lasting from 2 to 48 weeks. P wave duration was measured with an electrophysiological system in all leads at a paper speed of 200 mm/s and enhancement 64-128x. Bachmann's bundle block was measured in inferior leads, incomplete block in the Bachmann bundle is defined as the interval between 2 humps of the P wave above 40 ms, complete block is defined as a positive-negative P wave in the resistance above the inferior wall.

Results:

Parameter	Total, N=131	SR, N=62	AFL, N=69	P
Mean P wave duration (ms)	162 (145-181)	150 (142-165)	174 (160-189)	<0.001
	I, N=27	II, N=61	III, N=43	P
Age (years)	60.3±12.1	64.7±8.3	68.9±9.5	0.002
P wave duration (ms)	142.0±13.0	161.3±18.8	188.8±22.7	<0.001
Sinus Rhythm (N=62)	19	25	18	0.0186
AFL (N=69)	8	35	26	

I- Patients without Bachmann's Bundle Block, II- Patients with incomplete Bachmann's Bundle Block, III- Patients with complete Bachmann's Bundle Block

Conclusions: Patients with persistent AFL show a longer P wave or Bachmann's bundle block compared to paroxysmal AFL. The arrhythmia related longer P wave duration should encourage the clinicians to restore sinus rhythm earlier in order to more effectively maintain it over the long term.