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The effect of successful catheter ablation of ventricular tachycardia following myocardial infarction on parameters of late potentials K. Lefflerova 1, J. Kautzner 2, J. Bytys 3, R. L. Recht 4, P. Peichl 4, V. Vancura 4
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Ventricular late potentials (LP) have been identified as a prognostic factor in the prediction of ventricular arrhythmias in patients after myocardial infarction (MI). The aim of the study was to assess the effect of successful radiofrequency catheter ablation of ventricular tachycardia (VT) following MI on parameters of LP.

Patients and methods: study population consisted of 15 men after MI (mean age 64±9 years, mean left ventricular ejection fraction 28±9%) with documented sustained VT who underwent successful catheter ablation of clinical VT. Complete success was defined as noninducibility of any VT except polymorphic VT and/or ventricular fibrillation. During a mean follow-up period of 10±6.4 months, patients have remained free of recurrences of any VT. Late potentials were analyzed by means of MAC 5000 (Marquette Electronics), 250 QRS complexes were averaged in time domain analysis, quantitative variables were processed at 40 to 250 Hz and included filtered QRS duration (fQRS), duration of low-amplitude signals (HFLA) and root-mean-square (RMS) voltage of terminal 40 ms of the QRS complex. The measurements were performed before catheter ablation and within one week after procedure.

Results: pair-t-test was used to examine the results, there was no significant statistical difference in any of analyzed parameters.

<table>
<thead>
<tr>
<th>(QRS (ms))</th>
<th>HFLA (ms)</th>
<th>RMS (µV)</th>
<th>Noise (µV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-ablation</td>
<td>170 ± 32</td>
<td>63 ± 37</td>
<td>17 ± 13</td>
</tr>
<tr>
<td>Post-ablation</td>
<td>170 ± 33</td>
<td>60 ± 33</td>
<td>17 ± 10</td>
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</table>

Conclusion: the assessment of late potentials does not represent the method which is appropriate to verify the effect of successful catheter ablation of VT following myocardial infarction.

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Radiofrequency ablation of idiopathic ventricular ectopy in comparison to sustained idiopathic ventricular tachyarrhythmias using noncontact activation mapping L. Eckardt
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Ventricular tachycardia (VT) that occurs in patients (pts) with no evidence of structural heart disease and presents with a left bundle branch block pattern and an inferior axis commonly originates from the right or left ventricular outflow tract (RVOT/LVOT).

In the presence of symptomatic sustained VT radiofrequency (RF) catheter ablation has been shown to be very efficacious. It is unknown whether similar results can be achieved in pts with symptomatic idiopathic ectopy. In the present study, we therefore included 30 consecutive pts with idiopathic ectopy (n=17; mean age 47±15 years; RVOT n=10, LVOT n=7) and sustained VT (n=13; mean age 47±17 years; RVOT n=8, LVOT n=5). The pts had previously been unsuccessfully treated with a mean of 3±1 antiarrhythmic drugs. In all pts noncontact mapping (Ensite®; Endocardial Solutions) was used for localization of the target sites of ablation.

After positioning of a 9-French multielectrode array catheter in the right or left ventricle, virtually reconstructed unipolar electrograms and a displayed time-dependent isopotential colour map of the ectopy or VT guided ablation (8mm tip ablation catheter with a maximum of 70 Watt for 90s).

The earliest endocardial activation estimated by the virtual electrograms measured 30±15ms and 33±18ms in the group of pts with ectopy or sustained VT, respectively (p=ns). In the group of pts with ectopy, ablation was performed with a mean of 8±6 RF-deliveries. Acute success was defined as complete suppression of ectopy was achieved in 14 (82%) pts. This was comparable to the pts with sustained VT (acute success n=11 (85%), 6±5 RF-deliveries; p=ns). No complications were observed. During a mean follow-up of 12±4 months all successfully ablated pts were free of symptoms.

Conclusion: noncontact mapping guided RF-ablation of symptomatic ectopy is as effective as ablation of sustained idiopathic VT. Thus, RF-ablation is a promising therapeutic option in pts with drug-refractory, symptomatic ventricular ectopy.

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Gender-related differences in patients with atrioventricular nodal reentry tachycardia
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Aim: To assess the extent of gender differences in cardiac electrophysiological parameters and tachycardia induction patterns in patients with symptomatic atrioventricular nodal reentry tachycardia (AVNRT).

Methods: Clinical and electrophysiological data from 203 consecutive AVNRT patients (women: men ratio 2:1) who underwent successful catheter ablation were retrospectively analyzed.

Results: In both women and men, patients with other heart diseases experienced the first episode of palpitation at a significantly older age than those with lone AVNRT (50±18 vs. 29±15 in women, P<0.0001 and 45±20 vs. 31±17 in men, P=0.01). In women, 72% of patients with lone AVNRT had the first tachycardia episode during the childbearing age (15-50 years) while in patients with associated cardiac pathology this figure was only 27%. Sinus cycle length (797±142 vs. 870±161 ms, P=0.0001), and HV interval (41±7 vs. 45±8, P=0.0001) were shorter in women as compared to men. Also, women had shorter AV block cycle length (350±56 vs. 371±74 ms, P=0.03) and slow pathway effective refractory period (261±43 vs. 383±69 ms, P=0.02) while no differences were noted in fast pathway effective refractory period and VA block cycle length. Tachycardia cycle length was also significantly shorter in women (354±58 vs. 383±60 ms, P=0.0001). Concerning tachycardia initiation, 74% of the women with AVNRT induction at baseline had an AV block cycle length<350 ms while 94% had a VA block cycle length of<400 ms. In the same time, 68% and 37% respectively of female patients needing isoprenaline or atropine for tachycardia induction had an AV block cycle length>350 ms and a VA block cycle length>400 ms respectively. In men no such cutoff values could be found. The procedure time (133±48 vs 139±44 min), acute success rate (100% vs 98%) and recurrence rate (3% vs 6%) of catheter ablation were similar in the two sexes.

Conclusions: In patients with lone AVNRT, the onset of symptoms will occur at a younger age than in patients with other cardiac disease. Compared to men, women have a shorter slow pathway refractory period, AV block cycle length and tachycardia cycle length. Women have also a wider tachycardia window (difference between fast and slow pathway refractory period), that may contribute to the higher incidence of AVNRT in this group. Finally, in women, a VA block cycle length>400 ms have a relatively high sensitivity and specificity for the lack of tachycardia induction at baseline. The success rate of ablation and the recurrence rate are similar in both sexes.