VENTRICULAR PARASYSTOLIA AS A RISK FACTOR OF LIFE-THREATENING ARRHYTHMIAS

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The goal of our study was to define the prognostic significance of ventricular parasystolia (VP) in different groups of patients based on results of ETT. 174 patients with ischemic heart disease and VP were examined.

The diagnosis of VP was established according to next ECG signs: 1) the lack of preectopic interval oscillation; 2) interflowing ventricular complex; 3) the frequency of parameter.

EGC analysis of 29 cases of sudden death (17%) discovers regularities: 1) during ETT we noticed an increase of ventricular ectopic activity; 2) VP combined with signs of myocardial ischemia and practically all patients had it; 3) in 100% the results of ETT were reproduced.

Thus, ventricular parasystolia should take a place alongside life-threatening extrasystoles in risk-stratification of ventricular arrhythmia (Lown classification e.g.). However, the frequency, morphology, and severity of all these ventricular ectopic complexes should not be considered separately from the circumstances in which they occur.

Clinical data was prospectively collected and 24-hours Holter ECGs were used. The pts, who developed myocardial infarction, non-sudden and non-cardiac death were excluded from investigation.

Multivariate analyses was performed by Cox proportional regression aside subsequent new device implantation. The pts were receiving conventional therapy. The pts, who developed myocardial infarction, non-sudden and non-cardiac death were excluded from investigation. Statistical analysis was performed by Cox proportional regression.

Background: heart rate turbulence (HRT) is a strong risk predictor after acute myocardial infarction (MI). However, the value of HRT after unstable angina in predicting mortality is unknown.

Methods: we analyzed the prospectively collected Holter recordings of 386 male, age (56.4±9.5), unstable angina (UA) patients with left ventricle ejection fraction ≤ 40%. 2 parameters of HRT, turbulence onset (TO) and turbulence slope (TS) were measured from Holter ECGs using a computer algorithm. Clinical data was prospectively collected and 24-hour ECG monitoring was carried out with the use of monitor ‘Kardiotekhika-4000’ (Russia). Authenticity of average values was estimated by means of Student's t-test, frequencies of lethal outcomes – with the help of criterion P<0.05.

Results: in the group of patients with COB exacerbation duration of filtered complex QRS made 92±6.7 ms, duration of low amplitude signals LAS40–29.1±5.6 ms, the square of amplitude of the last 40 ms RMS40–71±4.5 mcV. It was found that 43 (39%) patients of this group had late potentials of ventricles. In the group of patients who hadn’t COB exacerbation duration of filtered complex QRS made 85±7.4 ms, duration of low amplitude signals LAS40–23.0±6.2 ms, the square of amplitude of the last 40 ms RMS40–106±9.6±6.1 mcV (p<0.05). It was found that only 4 (13%) patients of this group had late potentials of ventricles (p<0.01).

There were also some differences of indexes of high resolution ECG of atrial complex. In the group of patients with COB exacerbation duration of filtered P deflection made 98.5±1.4 ms, of low amplitude signals LASS–22.8±3.8 ms, of the square of amplitude RMS20–4.9±0.4 mcV. In the group of patients who hadn’t COB exacerbation these indexes made 97.2±2.4 ms, 7.7±2.0 ms (p<0.05) and 4.0±0.6 mcV accordingly.

Analysis of interdependence between echocardiographic indexes and parameters of high resolution ECG revealed a strong correlation between final diastolic size of the left ventricle and duration of filtered complex QRS (r=0.41, p<0.05), and also the square of amplitude RMS40 (r=0.22, p<0.05). Authentic correlation between HRECG indexes and sizes of the right sections of heart were not found.

In the group of patients with COB exacerbation arrhythmias were found more frequently: it was revealed that 17 patients (19%) had paroxysmes of supraventricular tachyarrhythmia, 82 patients (93%) had single ventricular extrasystole. In the group of patients out of exacerbation it was found that 2 (7%) and 7 (23%) patients accordingly had these arrhythmias (p<0.00001).

Conclusions: the group of patients with COB exacerbation is characterized with disturbance of the processes of myocardial depolarization which manifest itself in unfavourable changes of HRECG indexes of atrial and ventricular complexes and also authentically in a higher frequency of supraventricular and ventricular arrhythmias.

Results: the device has been used for 94 days, with an average daily compliance of 23 hours 15 minutes (range from 22h 05min to 23m 54m).

The amount of daily noisy ECG was 44 seconds, while the patient experienced 69 “check belt” alarms. There was not TV/FV alarms nor treatment delivered to the patient.

Conclusion: turbulence slope as HRT parameter may be used as risk factor for SCD in pts with unstable angina and left ventricle ejection fraction ≤ 40%.