

### SOME ASPECTS OF VISCEROCARDIAL INTERACTIONS AT CORONARY HEART DISEASE

Loginov S.V.\*, Kozlova I.V.\*\*

\**Dorozhny Clinical Hospital, Saratov*

\*\**State Medical University, Saratov*

Purpose of the work is to estimate the nosotropic significance of the abnormal gastroesophageal reflux on the ground of a clinical-instrumental examination of electrical instability markers of the cardiac muscle and viscerocardial interactions in coronary heart disease (CHD) patients.

Materials and methods. 225 patients were examined: 67 patients with a combination of CHD and gastroesophageal reflux disease (GERD) – the main group, and two groups of comparison: 72 CHD patients and 86 GERD ones.

According to sex-age composition the patients were commensured: in the group of patients with the combined nosology the average age made  $59 \pm 11,4$  years old, there were 33 (49,3%) women there; in the patients' group with CHD the average age made  $59 \pm 11,0$  years old, 34 (47,2%) women; in the group of patients with GERD the average age made  $56 \pm 10,6$  years old, 40 (46,5%) women.

The inclusion criteria: CHD (unstable angina, exertional angina of II-IV functional class, old myocardial infarction in the anamnesis), endoscopically positive GERD.

The exclusion criteria: clear rhythm or capacity disorders (atrial fibrillation, paroxysmal forms of tachyarrhythmia, frequent extrasystole, pulse generator availability, etc.), acute myocardial infarction during last two months and noncoronarogenic forms of the cardiac muscle damage, cardiac failures, signs of progression of acute or a chronic infectious disease recrudescence, cardiac decompensation of IV functional class according to NYHA, malignant neoplasms, endoscopically negative GERD.

The CHD was verified by the presence of old cardiac infarction or typical clinical presentation together with a positive take of stress-test (cycle ergometry), or together with the acknowledged episodes of myocardial ischemia at days ECG monitoring (SM ECG).

The diagnostics of endoscopically positive GERD was mediated by fibroesogastroduodenoscopy (FEGDS). The esophagus inflammatory-destructive processes' depth was carried out at total morphological investigation of biopsy materials of esophageal mucosa, the GERD with reflux esophagitis (RE) catarrhal and erosive forms was found.

As myocardium electrical instability markers the duration and asynchronism of repolarization processes, heart rate variability factors (HRV) were defined. In the standard ECG tested in generally accepted derivations the QT interval duration, QT interval dispersion (QTd) and QT corrected interval (QTc),

which was computed using the formula of H.Bazett modified by L.Taran и N.Szilagyi, were calculated. The SM ECG was carried out with the help of Cardio-techniques-4000 system; standard factors of HRV were taken into account: high frequency waves capacity within the limits of 0,4 – 0,15 Hz, P<sub>ДВ</sub> (HF), low frequency waves capacity within the limits of 0,15 – 0,04 Hz, P<sub>МВ1</sub> (LF), average value of NN-intervals' standard deviations calculated on 5-minutes periods during the whole record (SDNNi), the initial value of the most commonly occurring R-R intervals (MODA), relative high frequency waves' capacity value expressed in normalized units (HF in n.u.), relative low frequency waves' capacity value expressed in normalized units (LF in n.u.), total power of the spectrum (TP), percentage of the sequential intervals' diversity more than 50 mc (PNN50).

The statistic analysis of the findings was carried out with the help of standard statistic packages of programs Statgraphics, 6,0 version Statistica.

Results. A range of myocardium electrical instability markers' state features was found out, thus, CHD patients authentically ( $p < 0,05$ ) differed from GERD patients with normal QT, QTc and QTd excess incidence; in the CHD patients a more significant asynchrony of repolarization processes compared to the GERD patients was found authentically ( $p < 0,05$ ). At comparison of the showings of the patients with CHD and GERD combination and patients with "isolated" CHD it is found that the average QTc, QTd in the group of patients with the combined pathology were authentically ( $p < 0,05$ ) higher than in the patients with CHD. The investigation of features of repolarization processes depending on the degree of RE testified that in the group of patients with the combined pathology an authentic increase ( $p < 0,05$ ) of the duration and repolarization processes asynchrony with an erosive variant of GERD unlike the patients with catarrhal RE is registered.

At the analysis of HRV factors authentically lower ( $p < 0,05$ ) values of HF, LF, MODA, TP, SDNNi and PNN50 compared to the group of patients with "isolated" CHD have been detected in the patients of the main group. The combined pathology patients authentically differed ( $p < 0,05$ ) from the GERD patients on all investigated factors of HRV. The HRV factors comparison in the group of patients with the combination of CHD and GERD depending on the degree of RE allows speaking on an authentic decrease ( $p < 0,05$ ) of HF, LF, HF in n.u., LF in n.u., MODA and TP with erosive changes of the lower third of the esophagus. No similar tendency was detected in the GERD patients group.

A multivariate regression analysis of the findings was carried out, and it testified that the intensity of RE exerts an independent authentic ( $p < 0,05$ ) influence on both myocardium inhomogeneity (QTd) and HRV factors.

Conclusions. The characteristics of coronary heart disease in the aspect of transnosologic comorbidity with gastroesophageal reflux disease are: 1. the decrease of the cardiovascular system adaptative capacities, lower stress tolerance of the body and greater probability of the myocardium electrical instability; 2. the depth of the esophagus structural changes – the independent factor of the myocardium electrical instability risk in the given class of patients.

The article is admitted to the International Scientific Conference "Fundamental and applied problems of medicine and biology"; Italy (Sicily), July 15-22, 2007.; came to the editorial office on 25.06.07

### PROTRACTED FORMS OF BETA-BLOCKERS AT COMBINATION OF CORONARY HEART DISEASE AND GASTROESOPHAGEAL DISEASE

Loginov S.V.\*, Shvarts Yu.G.\*\*  
 \*Dorozhny Clinical Hospital, Saratov  
 \*\*State Medical University, Saratov

Transnosologic co-morbidity is one of the most complicated problems practitioners come across at drug treatment prescriptions. The combination of coronary heart disease (CHD) and gastroesophageal reflux disease (GERD) is a common clinical situation. It is found out that the gastroesophageal area damage occurs in 35 % of cases in the CHD patients. The pathogenetic therapy of CHD including beta-blockers leads to blood pressure decrease in the lower esophageal sphincter (LES) and increase of the episodes of its transitory relaxations; that, in its turn, becomes one of the risk factors for GERD progression. Whereas we found that the gastroesophageal reflux (GER) and the reflux esophagitis (RE) are the independent risk factors of the myocardium electrical instability in the patients with CHD and GERD combination. Thus, the problem of searching means for the CHD therapy, that do not influence the NPS tonus in patients with CHD and GERD synthropy (that will improve the prognostication in the given class of patients), is extremely pressing. We have supposed that the features of pharmacokinetics of unprotracted and retarding forms of medicinal preparations, which are connected with the intensity of variations of the preparation concentration in blood, can turn out to be significant.

We have carried out an open randomized study of metoprolol tartrate's protracted form safety (Metocard® Retard, production of «Polpharma», Poland) and metoprolol tartrate's unprotracted form safety (Metocard®, production of «Polpharma», Poland) in patients with CHD and GERD association.

**Materials and methods.** 60 patients were examined. They were randomized into 2 groups of 30 persons in each one. The inclusion criteria: CHD. Exertional angina of 2-3 functional class and /or CHD. Old myocardial infarction combined with endoscopy-

cally positive form of GERD, acceptability of beta-blockers. The GERD was diagnosed on the data of fibroesophagogastroduodenoscopy (FEGDS). The exclusion criteria: acute forms of CHD, noncoronogenic forms of the cardiac muscle damage, acute infectious diseases, chronic illnesses in decompensation stage, cardiac failures, cardiac decompensation of IV functional class according to NYHA, malignant neoplasms, well-known contraindications to metoprolol application. The patients of both groups were com-measured according to their sex, age (the average age -  $65\pm 5$ ) and comorbidity. The investigation duration was 30 days. The first group patients got 200 mg of Metocard® Retard per day; the second group got Metocard® in daily dose of 200 mg. Besides the specified preparations all the patients got ACE inhibitors, anti-aggregants and inhibitors of protonic pump in standard doses. For the purpose of estimation of the total GER episode number per day and daily average factor of intraesophageal pH (IP pH) the daily IP pH-monitoring with the application of "Gastroscan-24" unit was used, and it was carried out right after the randomizing and in 30 days from the starting moment of the investigation.

**Results.** The initial examination data in the selected groups didn't differ. At the administration of the protracted preparation the IP pH-metria factors authentically didn't change, while in the patients, who got unprotracted metoprolol, the last some deteriorated. In the patients, who got Metocard®, the daily average IP pH factor after the treatment made  $3,31\pm 0,12$ , while in the patients, who got Metocard® Retard, -  $3,61\pm 0,11$  ( $<0,05$ ). At the investigation of the total number of GER episodes per day authentic differences ( $<0,05$ ) were obtained: the minimal number of GER episodes was registered in the patients, who got Metocard® Retard, and the maximal one – in the patients, who got Metocard®. Thus, according to the data of IP pH-metria, the GER intensity was authentically more ( $<0,05$ ) in the patients, who got the treatment with Metocard®, than in the patients, who got Metocard® Retard.

**Conclusions.** The findings allow supposing a more unfavourable run of GERD, and accordingly, a more risk of myocardium electrical instability development in patients with combined pathology at unprotracted metoprolol form application. Thus, Metocard® Retard is the agent of choice in patients with coronary heart disease synthropy and gastroesophageal reflux disease.

The article is admitted to the International Scientific Conference "Fundamental and applied problems of medicine and biology"; Italy (Sicily), July 15-22, 2007.; came to the editorial office on 25.06.07