Abstract: P487

Analysis of cardioprotection efficiency in case of acute myocardial infarction

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Background: Attention specialists call alternative approaches to the analysis of ECG, especially displaying ECG in phase coordinates. Quantitative analysis of PQRST complexes provides non-invasive mapping of metabolic processes in myocardium. This ways of EKG-analyse are useful for optimization strategies of urgent treatment.

Purpose: The main idea of the study is to determine the possibility of using quantitative ECG methods for analysis of the cardioprotection efficiency in the treatment of patients with AMI.

Methods: 33 patients with AMI were examined by our own program based on analysis of phase ECG for 30 seconds of recording in quiet and after i/v injection (23 - water-soluble form of quercetin, 10 - arginine hydrochloride) with assessment of rhythm variability (RH), QT dispersion, ST-slope, ECG differentiation with modelling of the first derivative of the T-wave. We analyze also heart rate(HR), blood pressure(BP), respiratory rate(RR), Shtange’s&Ghenci’s respiratory tests, pulse oxymetry (oxygen saturation (SpO2) and Infusion index (IP)), and evaluation of the autonomous balance using Kerdo&Hildenbrant indexes.

Results: Both drugs increase chronotropy but quercetin better after every test ((Shtange’s test (42,23% VS 5,15%, (p<0,001)) and (Ghenci’s test, 41,51% VS 2,06% (p<0,05)). Respiratory function increased in both tests with optimal treatment by arginine hydrochloride (7% 13,73 (?<0,001) against 7% -7,69 (?<0,002) for quercetin). The identical distribution of SpO2 with predominance in the case of IP for arginine hydrochloride (Indexes quercetin 7% -71,1, (?<0,001) and arginine hydrochloride 7% 32,11, (?>0,1) with true divergence between(?<0,05). There is predominance of sympathetic activation for arginine hydrochloride against system imbalance for quercetin; arginine hydrochloride activates the sympathetic circuit and decreases the duration and dispersion of QT interval. Reducing the inclining angle and continuation height of the ST segment for quercetin, which may be response to the development of heart failure. Changes of T-wave characteristics are positive, but more pronounced in the case of arginine hydrochloride.

Conclusion: The results of the study allow us to offer simple methods monitoring of central hemodynamics, RR, temperature reaction, index of autonomic balance and quantitative assessment of ECG under developed software, determination of the HRV, and modelling of the first derivative of the ECG to objectificate the efficiency of treatment of patients with AMI.