

UNIVERSITY OF MEDICINE AND PHARMACY FROM TIRGU MURES

INCIDENCE OF ARRHYTHMIAS IN ISCHEMIC HEART DISEASE

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ABSTRACT

This paper contains a general and a special part. **The general part** includes data from specialized literature about the ischemic heart disease, the pathophysiology of myocardial ischemia, atherosclerosis risk factors, among them are the male gender, dyslipidemia, diabetes, physical inactivity, and smoking. In the general part I have also presented the clinical forms of ischemic heart disease (angina types), data about rhythm disorders encountered in patients with coronary disease, a presentation, pathophysiology and clinical arrhythmias to be followed in the second part of the work, namely in **the special part**. This contains personal contribution to this thesis, starting with the description of the two groups studied and continuing with the method used to select patients, statistical calculation and results.

Introduction. Ischemic heart disease affects an increasing proportion of the general population, and draws itself many complications, one of these complications, sometimes fatal, being rhythm disorders.

Aim. Analyzing the incidence of arrhythmias in a lot of patients with ischemic heart disease, ECG Holter monitored for 24 hours and searching possible correlations between characteristics of the patients, associated pathologies and type of arrhythmias detected on the ECG, and watching a lot of patients in dynamic and analysis of their evolution in terms of symptoms, echocardiographic characteristics and rhythm disorders, under antiarrhythmic treatment properly led.

Material and method. In order to fulfill the proposed, we conducted two studies. A retrospective observational analytical one for a period of 54 months (4 years and a half) that included 388 patients, all with coronary artery disease and arrhythmias, hospitalized in the period 1 January 2009-1 July 2013 in the Medical Clinic III from Tirgu Mures. All the 388 patients experienced during the 7-10 days of hospitalization, one Holter ECG entry for 24 hours, the recorded rhythm disorders being classified in supraventricular rhythm disorders (atrial fibrillation, tachycardia by internode reentry / atrioventricular, focal atrial tachycardia / multifocal) and ventricular arrhythmias (classified according to Lown classification). In the second study were included a total of 98 patients hospitalized between 1st of July, 2010 – 1st July 2011, and followed patients evolution at 6, 12 and 18 months in terms of rhythm disorders under antiarrhythmic treatment properly conducted according to the European guidelines.

Statistical analysis was computerized performed using the Epi Info program, developed by the Center for Control and Disease Prevention (CCD) in Atlanta, Georgia (USA). Chi square tests and Fischer test were used, the confidence limit being of 95%. For continuous variables

was calculated the average \pm standard deviation, and for categorical variables were calculated the frequencies and percentages.

Results and discussions on study 1. Average age of the 388 patients was 63.1 ± 9.2 years, the male sex representing 44.7% of the group. The most common age of people in the study was between 50 and 59 years, they being in proportion of 41.2%. Related to associated pathology, heart failure was encountered in almost 95% of the patients, hypertension in 86% of patients and dyslipidemia to 47.6%. Atrial arrhythmias in order of their frequency in the study group were: atrial fibrillation - 24%, focal atrial tachycardia - 14.7%, reentrant internode tachycardia - 12.1%, atrioventricular reentrant tachycardia - 10.6% and multifocal atrial tachycardia - 8.5%. According to Lown classification, ventricular rhythm disturbances in patients from the study were presented as follows: Lown class 0 - 2% of the lot, Lown class I - 16.2%, Lown II - 17%, Lown III - 28.9% of patients, Lown IV - 33.8% and Lown V - 2%. Statistical calculation revealed a significant statistically correlation ($p = 0.0078$) between female gender and high-risk Lown class (III-IV-V), also between high-risk class and hypertension ($p = 0.0001$) between heart failure and same class Lown high risk ($p = 0.0001$).

Results and discussions on study 2. Average age of the 98 patients in the study was 65.8 ± 11 , after 18 months of follow-up and treatment of patients correctly led, rhythm disorders, present to all patients at the study enrollment were reduced with 69.1, symptoms present at first hospitalization to over 45% of patients, was present in 10% of them at 18 months. Mortality at the end of the study was 4.1% of the group, but only 2% of patients died in result of malignant arrhythmias. There was also a progression of paroxysmal or persistent atrial fibrillation at first hospitalization (present in 32.7% of patients), at permanent atrial fibrillation at 18 months to 18.1% of patients.

Conclusions. The most effective way to detect rhythm disturbances in for effective therapies, is ambulatory Holter ECG monitoring for 24-48 hours, this showing a 48% incidence of supraventricular rhythm disorders, and 52% of ventricular rhythm disorders in the patients in the first study. By early and accurate detection of the type of arrhythmia, it is possible to establish therapies with positive impact on the subsequent evolution of the disease, due to the correct treatment led to the end of the second study, 69.1% of patients were in sinus rhythm. Mortality by malignant ventricular arrhythmias (sustained ventricular tachycardia, ventricular fibrillation) was recorded at a rate of 2% of the group watched in dynamics.

Key words: ischemic heart disease, arrhythmias, Holter monitoring.