MEASURES AND REFORMS TO THE BEST MANAGEMENT OF HEALTH SERVICES AT THE ELDERLY WITH CORONARY DISEASE, IN ARAD

GAVRILA Mihaela

Abstract:
At the end of the last century more than half of the deaths from our country were the result of cardiovascular diseases, a quarter being the cause of acute myocardial infarction. The standard mortality rate due to cardiovascular diseases, in Romania, was in a ratio of 2 to 1 compared to Europe, situation that has been influenced by 2 causes. On the one hand, there is the different incidence of atherosclerosis and, on the other hand, there is the efficiency of the treatment in the actual stage of cardiovascular diseases, especially in the stage of coronary disease: acute myocardial infarction (AMI), (Braunwald, 2005).

To propose these measures and reforms to the best management of health services at the elderly with coronary disease in Arad, we intends to analyzed, for a period of 7 years, prehospital and hospital management of the patients who suffer from AMI, in order to identify the features of present medical assistance in Arad, and to achieve a forecast, for the next 7 years, until 2013 of: the population, the specific mortality and the number of the lost years as a consequence of this pathology, in order to improve the management of health services in AMI, the identification of the sanitary education level and the patients who show great factors of cardiovascular risk, the logistics of ambulance assistance on case of coronary emergencies for an efficient prophylaxis and therapy, reducing the specific indicators of AMI mortality and the social reinstatement of the patient.

Key words: the management of health services, the elderly, coronary disease, Arad county.

The Purpose of the Paper
This paper intends to analyzed, for a period of 7 years, prehospital and hospital management of the patients who suffer from AMI, in order to identify the features of present medical assistance
in Arad, and to achieve a forecast, for the next 7 years, until 2013 of: the population, the specific mortality and the number of the lost years as a consequence of this pathology, in order to improve the management of health services in AMI, the identification of the sanitary education level and the patients who show great factors of cardiovascular risk, the logistics of ambulance assistance on case of coronary emergencies for an efficient prophylaxis and therapy, reducing the specific indicators of AMI mortality and the social reinstatement of the patient.

The Objectives of the Research

In Arad, in 2002 for example, at a population of 462,427 citizens, the mortality rate due to cardiovascular diseases has been more superior to the specific cardiovascular mortality, in Romania, and it was recorded at values which went beyond the standardized World Health Organisation (WHO) mortality rate for cardiovascular diseases. The mortality, too, due ischemic cardiopathy in the same year, represented 30% of all the deaths as a result of cardiovascular diseases (Bucur, Dragomir, 2006). Taking into account these observations, I have started a wide evaluative research of: the prevalence of ischemic cardiopathy, the acute myocardial infarction incidence at the citizens from Arad, the specific mortality correlated with the patients’ biological parameters and the logistics parameters of health system, (the present management of the primary medical assistance in AMI, with the determination of strong and weak points in pre-hospital/primary management in AMI, in Arad. There has been made a prospective estimation, for the next 7 years, in Arad, for the citizens’ cardiovascular health, taking into account the present management and health services in AMI, in Arad.

Materials and Working Methods

There has been made a database using: the informational and the written records of the ambulance service from Arad, the informational records of the demographic data from the University Hospital from Arad, the registers with the consultations / hospitalizations belonging to the Hospital’s Emergency Unit, observation files of the hospitalized patients from the Department of Intensive Coronary Therapy (ICT), the evidence register with cases of thrombolysis, from the ICT section.

The cases have been researched taking into account the following criteria: the stable residence in Arad, at the beginning of
the research, residence in the last 20 years in Arad, the existence of the precipitant factors in the etiopathogenesis of the acute myocardial infarction, initial presumption diagnosis: acute myocardial infarction, AMI with ST elevation positive diagnosis confirmed by at least 2 of the WHO classic criteria, the clinical beginning is below 6 hours for the patients eligible to fibrinolysin, the creation of 2 equal groups, statistically speaking, regarding AMI cases of patients with thrombolysis and without thrombolysis, the evaluation of the thrombolytic therapy’s efficiency applied precociously in AMI, the number of the lives saved (deaths recoded for 1 day, 30 days, and 1 year), (ACC, 1990).

The statistical analysis of the whole group has been made according to a variety of items. The methods of research used for the epidemiological diseases, which are not contagious for the population study. Due to the fact that in the research of morbidity there is always difference between the evident, subjective, diagnosed, declared, recorded, known examination and the real level of the affection of the population, I have chosen to refer to the medium error calculation (the standard error), the application of the statistical significance tests and the establishment of the trust level, when it came to discuss the results.

**Data Processing and Validation**

In order to process the data, there had been used statistical and graphical programs: *SPSS 12.0 and 14.0 for Windows*, EXCEL, EPIDATA. Moreover, I have used the Word program for the written presentation and Power Point for the oral presentation (AchimasCadariu, 2000; Andrei, Bucur, Dragomir, 2006; Constantin, Surulescu, Zaharie, 1997).

**Results**

The death rates due to cardiovascular ischemic disease for the population of Arad, during 2000-2006, show a linear increase along with the age for both sexes, but strongly to the male sex.

This research shows an increase in morbidity due to AMI, in Arad, at the beginning of 2005, with a seasonal variation (the warm months), a weekly variation (pick at the beginning of the week), and circadian (maximum at 9 a.m.).

The management of the patients who suffer from acute myocardial infarction shows an average period of at least 3 hours
from the start of the symptoms and the transport to the hospital, most patients arrive at the hospital around 12-14-15 p.m.

Thrombolytic therapy improves very much the evolution of the patients who suffer from AMI, leading to a decrease of mortality, for a short period of time and it also improves the performance of the left ventricle, improving the diagnosis at distance and increases the quality of post-AMI life. In case of AMI, the thrombolytic therapy must be applied with the shortest time possible since its start (Braunwald, 2005, 47: p.1141-1226). For the study groups, there is the statistical significance below the setting up of thrombosis in less than 2 hours since the start of the AMI symptoms as compared to a period of 5 hours and even more, reported to death in case of 1 day to 30 days, being recommended the fibrinolysin therapy in less than 1 hour from the beginning of AMI in order to improve the LV performance (EF over 40% to 48% from the thrombolytic patients) and the survival.

The comparison between the deaths and the lost years of life, taking into account the sexes and the age, shows that specific mortality caused by cardiovascular diseases is inversely proportional to the lost years of life for the WHO age classes. It has been noticed a general decrease in the population of Arad, in 2000-2006, but it is also forecast that in the next 7 years the decrease will continue: 2007-2013. Studies show that the number of deaths recorded during 2000-2006 increased slowly with age, but the decrease in the number of people in the following 7 years would be marked by an affection of the population.

Conclusions

In Arad:

- The addressability and accessibility to the specialized health services is more superior of the urban area than for the rural area.
- The thrombolitic application in AMI takes place at a low rate in Arad, beyond the relative and absolute counterindications of this therapy, a low percent is the result of a poor time management (the addressability and accessibility of patients, especially those from the rural are), but it also depends on other logistics elements: the disponibility for the fibrinolytic medication (factors which are part of the economical management of the hospital), the technical resources (ambulance equipped with ECG in 12 derivations,
the possibility of radio/wireless transmission – TV medicine) and the human resources used for the setting up of the pre-hospital fibrinolysis (which doesn’t exist at present in Arad)

- Addressability during the peak period: 12-15p.m., involves, for the improvement of a hospital’s management in AMI, a supplementary medical staff for all UPU units, and the organization of eligible cases of a fast access to the TIC unit. It is also necessary the establishment of a laboratory of interventional cardiology in case of medical thrombolytic ineligibility, and also for further surveillance of the patients, through angiocoronarography, used if the thrombolytic treatment fails

- The hospitalization period is reduced almost to half of the time, in case of thrombolytic patients, compared to the witness group, due to a positive evaluation of a myocardial post infarction, shows a good social reinsertion of the patient, reducing the period of convalescence and implicitly the cost reduction for the health system, justifies one more time the advantages of this therapy for the individual and public (system) health

- The correlation with the 2 population reduction tendencies (recorded: 2000-2006 and estimated: 2007-2013) in Arad underlines the accentuation of this reduction, and represents an important reason to reconsider the management of the coronary diseases and of the myocardial infarction in Arad

- It is important to underline that the improvement of the patient approach through prophylaxis, but also through the emergency management in case of the acute myocardial infarction, the measures and reforms to cardiovascular health of geriatrics patients which can reduce this tendency.

**Discussions**

The results and observations of the research made in this paper can be materialized through the necessity of improving the prevention measures and through the control of the acute coronary incident, in Arad. It is extremely important to inform and make the population aware of the cardiovascular risk factors which depend a lot on the population’s addressability and accessibility, especially in the rural area, to the special medical services and the improvement of the logistics system in case of this pathology.
assistance (ambulances of type C, with TV medicine possibilities, the development of afferent human resources, the establishment of a cardiology center for intervention with angiocoronarography benefits). For a longer period of time, benefits imply the improvement of the health care of the citizens from Arad, the reduction of morbidity and special mortality due to AMI, the growth of the quality of life in case of the patients with post infarction, through the decrease of hospitalization indicators, the improvement of the health system costs; in order to improve the pre-hospital AMI management, in Arad, we suggest:

- The information and education of the citizens, especially of those with a coronary risk, in order to recognize the emergency and to address themselves to the medical services/call 112, with GPS, so that the beginning of the AMI symptoms – the call 112 to be reduced to 1 to 5 minutes, and the duration of the transport to hospital should take less than 8 minutes, in order to perform the thrombolysis in less than 30 minutes from the beginning of the acute myocardial infarction
- The coordination and assurance of an efficient relation between: the family physician, the doctor on the ambulance, and the doctor of UPU
- The purpose of therapy at the patients with acute myocardial infarction has to be represented by the rehabilitation of the anterograde coronary flow and it supports the most efficient therapy, the one which can be done fast and safe.

Fig. 1. The purpose of efficient management of the times for the population from Arad
In order to establish an efficient management of the health services for the population from Arad, in case of the pathology: ischemic coronary disease, acute myocardial infarction, it is necessary to take into account all the factors implied the system’s function: the population’s addressability, the technical resources, the human resources (Alexander et al, 2007). Each of these factors can be improved in order to increase the quality of health services management in case of acute myocardial infarction and the quality of this management is noticeable beyond the economic factors, because of the number of lives saved, no matter the age, from Arad.

Fig. 2. The factors implied the system’s function
Bibliography

- ACC (AHA Report), (1990), subcommittee to develop guideline for the early management of patients with acute myocardial infarction. Circulation, 82, 5: 664-707;
- Achimas-Cadariu, A., (2000), Metodologia Cercetării Științifice Medicale, Editura Univ. „Iuliu Hațieganu”, Cluj-Napoca;
- Constantin, Gh., Surulescu, N., Zaharie, D., (1997), Leceții de statistică descriptivă I, II; Tipografia Universitatea de Vest Timișoara.