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Prevention Fundamentals of Acute Coronary Syndromes in Uzbekistan

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Methods: This research was conducted with the collaboration of Russian researchers RECORD-2 project (supervisor – Prof. N.A. Gratsiansky, coordinator – senior researcher A.D. Erlikh), patients age spectrum was between 26 to 88 years with a suspicion of one of the acute coronary syndromes at the time of admission to the hospital and included in the acute coronary syndrome register. A specially organized register included 612 patients with acute coronary syndrome.

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Prevention Fundamentals of Acute Coronary Syndromes in Uzbekistan

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Findings: During this research a special model was developed and it entails the identification of target risk-generating groups of the population/patients with CVD (target-basis for "life-saving prevention," men and women under 50 years old, men and women 50-64 years old, men and women>65 years old, inadequate and incomplete "basic" pharmacotherapy in the standards of management of patients with ACS, inadequate and incomplete "basic" pharmacotherapy in the standards of management of patients with ACS).

I. Introduction

The Cardiovascular Diseases (CVD) epidemic continues into the 21st century. For several decades, they have been the cause of death of the population in industrially developed countries, including the Commonwealth of Independent States (CIS), where, for example, almost 1.2 million people die from CVD every year in Russia, which is 55% of the total mortality [1,2,5,9,10,11]. Moreover, the forecast for the future, especially for acute coronary syndrome (ACS), is not comforting. Therefore, for today, attention to the ACS is quite deserved. It is presented the epidemiological evidence obtained in different countries and populations of the world:

- There has been a decrease in mortality from CVD in the last 30 years in many economically developed countries, while in the CIS and Russia there is still a tendency towards an increase in mortality or CVD mortality rates, for example, in Russia, they are 2-4 times higher than in the USA, Canada and Australia [4,8,12,13];
- Mortality from ischemic heart disease (IHD) alone exceeds mortality from all types of neoplastic diseases combined [14,15];
- At the age of 20 to 24 years, 8 people per 100 thousand of the population fall ill with IHD in some CIS countries, and at the age of 60 to 64 years, the numbers increase to 1712 per 100 thousand [3,6,7];
- A similar tense epidemiological situation takes place in almost all industrialized countries of the world [16, 17, 18].

It happens even though the clinical course of IHD/ACS is well known and many new drugs have been created that can affect the clinical manifestations of the disease. Consequently, there are still imperfections in clinical cardiology and, apparently, for a positive solution to these issues, it is necessary to give an evidence-based reorientation of the health care system to prevent and focus epidemiological research on the most common forms of CVD. An unequivocal scientific conclusion was made in modern research and it was proved that these approaches are reliable and with their help, key factors of the still-unidentified epidemiology of CVD can be determined not only when "... iceberg of diseases comes to the surface of clinical manifestations" (5-10% of all cases), but also when “clinical manifestations are silent” [19,20,21,22,23].

This scientific problem is also especially relevant for Uzbekistan, since so far the ACS Registers have not been conducted in Uzbekistan and so far, naturally, there is no reliable opportunity to systematize knowledge about the current level of ACS treatment in various regional hospitals of the country. Thus, there could be, firstly, unfavourable epidemiological situations concerning ACS and, secondly, an unreliable idea of the quality of ACS treatment and its results in the conditions of Uzbekistan.

Based on the foregoing, the present work was conceived and carried out. The topic of the dissertation was chosen following the priority scientific research in the Republic of Uzbekistan related to early prevention and treatment of cardiovascular diseases, optimization

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of methods of prenosological diagnosis and pharmacotherapy.

The study aimed to determine the characteristics of prevalence, diagnosis, treatment and outcomes of ACS in modern conditions.

II. Materials and Methods

The work was carried out in the framework of the Russian RECORD-2 (supervisor – Prof. N.A. Gratsiansky, coordinator – senior researcher A.D. Erlikh), all consecutively hospitalized male and female patients aged 26 to 88 years with a suspicion of one of the acute coronary syndromes at the time of admission to the hospital and included in the ACS register. A specially organized register included 612 patients with ACS.

III. Results and Discussion

Men 414 (67.6%) and women 198 (32.4%). The average age of patients is 58.2 ± 11.3 years, minimum of 26 years and maximum of 88 years.

The results allowed us to identify 30 epidemiological, clinical, biochemical and pharmacoepidemiological Risk Factors associated with the development of ACS and their "endpoints" in the adult population of Andijan.

It has been proven that the chance of detecting ACS and "endpoints" in CVD patients is significantly higher in the presence of epidemiological (8), clinical (14), biochemical (4) and pharmacoepidemiological (4) factors than in their absence. Based on the obtained epidemiological, clinical and pharmacoepidemiological patterns of ACS development, a mathematical model of ACS was created and implemented for widespread use, which allows predicting the likelihood of ACS development and "endpoints" from them in patients with the indicated risk factors in almost 100.0% of cases.

Further, based on the identified clinical and epidemiological features of the formation of ACS and the risk of "endpoints" from them, we have developed proposals for a model of urgent "life-saving prevention" of ACS in people with CVD in Andijan.

The chance of detecting ACS and "endpoints" in patients with CVD is significantly higher in the presence of epidemiological (8), clinical (14), biochemical (4) and pharmacoepidemiological (4) factors than in their absence. The frequency of identifying the noted risk factors or their combination, included in the presented mathematical model, makes it possible to predict the likelihood of developing ACS and "endpoints" from them in patients with these risk factors in almost 100.0% of cases.

Based on the identified clinical and epidemiological features of the formation of ACS and the risk of "endpoints" from them, we have developed proposals for a model of urgent "life-saving prevention" of ACS in people with CVD in Andijan conditions (Table 1).

Table 1: Proposals for a model of urgent "salvage non-drug and drug prevention" of acute coronary syndromes and adverse events from them in CVD patients in Andijan conditions

Objects of "aggressive" urgent "life-saving prevention" in patients with ACS	
Specificity of epidemiological risk factors and their impact on ACS	The direction of the strategy of primary, secondary and tertiary prevention
Target - the basics of "life-saving prevention"	
Risks are male sex and age group> 65 years. In the formation of ACS and adverse events from them at the prehospital and hospital stages, as well as at discharge from the hospital, 30 risk factors are of priority importance. They should be the "main" guidelines for emergency prevention.	Preventive activities – drug and non-drug "aggressive" prophylaxis is carried out at the prehospital stage (by SVP / HHP, EMC), in the hospital (by narrow specialists, cardiologists) and at discharge (rehabilitation doctors, exercise therapy specialists, cardio dispensary doctors). Emergency prevention should be an obligatory component and coordinated process of treatment programs in all its stages.

Continuation of table 1

Men and women under 50	
Adverse epidemiological conditions concerning ACS are actively formed	Groups for primary prevention are being formed by primary health care and primary prevention measures are being actively implemented
Men and women - 50-64 years old	
The incidence of ACS is sharply increasing. The main risk factors of their development are all of the above factors, except for smoking and itching.	The introduction and implementation of special surveillance-epidemiological and preventive programs provide effective "life-saving prevention" against ACS
Men and women> 65 years	
The main risk group for the development of ACS and "endpoints" from them. Relatively many very high-risk patients	In health centers, in primary health care and the conditions of cardiac dispensaries, "aggressive" medication and non-medication, continuous (lifelong) preventive interventions are carried out

Continuation of Table 1

Inadequate and incomplete "basic" pharmacotherapy, deviation in the standards of management of patients with ACS	
1. A long time elapsing from the onset of symptoms to admission to the hospital. 2. Not a very high frequency of use of antiplatelet agents. 3. Insufficiently active TLT therapy. 4. Insufficiently active treatment with statins and beta-blockers	1. Eliminate the discrepancy between treatment and recommendations of international expert groups by conducting annual nosocomial and interhospital registers. 2. Acceleration of hospitalization of patients by improving the work of the ambulance (introduction of prehospital thrombolysis, refusal of a special team in the transportation of patients with ACS)

IV. Conclusion

As can be seen in Table 1, the model we developed entails the identification of target risk-generating groups of the population/patients with CVD (target-basis for "life-saving prevention," men and women under 50 years old, men and women 50-64 years old, men and women > 65 years old, inadequate and incomplete "basic" pharmacotherapy in the standards of management of patients with ACS, inadequate and incomplete "basic" pharmacotherapy in the standards of management of patients with ACS).

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