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[1]G.M. Azadzhanova, [1]Z.I. Sultanova, [2]Y.A. Anaorazov
[1]South Kazakhstan Medical Academy
[2]International Kazakh - Turkish University named after H.A. Yassavi

SUDDEN HEART DEATH

In Kazakhstan, mortality from sudden cardiac death is more than 75%. Most cases (85%) of the mechanisms of development of BCC have ventricular tachyarrhythmias - ventricular tachycardia (VT) and ventricular fibrillation (VF) followed by the development of asystole. Theremaining 15% isattributabletobradyarrhythmiaandasystole.
Keywords: *sudden cardiac death, death, cardiac death.*

Relevance of the research topic: Despite the fact that all measures taken, sudden cardiac death is one of the urgent problems of the present time. The consequences lead to a decrease in the average life expectancy of the population. The progressed countries, daily, suddenly die about 2500 people, moreover, only in 2-5% of cases death occurs in medical institutions. In Kazakhstan, according to the calculated data, the percentage of sudden cardiac death corresponds to a level of 80% per year with a survival probability of not more than 1.0%. The probability of successful resuscitation, even in economically developed countries, does not exceed 5%, since such repeated occurrences of the incident happen in a dream or without witnesses, it is clear that it is not possible to provide assistance within 6-8 minutes.

Objective: to identify the main causes and risk factors for sudden cardiac death.

Research tasks: To study the data, to carry out a literary survey and to reveal the incidence and the degree of complications of SCD.

Sudden death (BC) of any age category is an actual problem for the study by clinicians of many specialties, from pediatricians, cardiologists, neurologists, gerontologists, pathologists, forensic medical experts, etc. This is due to the main components of concepts - suddenness, surprise to others, lack of , at first glance, the main cause that led to the onset of the lethal outcome, and a very short time interval during which all terminal stages are realized. However, throughout the existence of medicine, the leading place (~ 90%) in the concept of VS is sudden cardiac death (BCC), where the main etiological factor is a hidden pathology of the heart and vessels that is not diagnosed during life or a cardiovascular disease system, compensated by the time of death.

The main nosological cause of sudden cardiac death is ischemic heart disease (80-85%), with more than half of these cases associated with acute coronary artery disease, which made it possible to distinguish the term "sudden coronary death" (VCS). The high prevalence of IHD predetermines the need for objective monitoring of VCS frequency in the population. However, the peculiarities of VCS development: the sudden nature, the absence in most cases of a medical worker at the time of death, cause the complexity of studying this problem [3.10]. In this regard, the purpose of this study was to clarify the prevalence of VCS, as well as the quality of diagnosis and statistical recording of VCS in practical health care.

In the structure of mortality from diseases of the circulatory system of the able-bodied population in Kzakhstan, coronary heart disease (CHD) is more than 75%. The course of IHD can be different. The disease can begin to be acute, manifested by the so-called acute coronary syndrome (which includes unstable angina and acute myocardial infarction). Sometimes the first (and last) manifestation of the disease is sudden death. Particularly unfavorable is the fact that in IHD death is sudden in 60% of cases. The more severe and accelerated development of atherosclerosis, perhaps, is the reason for the increased incidence of ARB in our country.

One of the possible start-up factors may be psychological stress, which results in an increase in the activity of the sympathetic adrenal system to an increase in heart rate, an increased risk of ventricular life-threatening rhythm disturbances and damage (rupture or tearing) of atherosclerotic plaques followed by acute coronary artery thrombosis. According to autopsy data, occlusive thrombosis of coronary arteries is found in 15-64% of sudden deaths. Reduction of cases of its detection in recent times is probably due to more active use and spread of thrombolytics and anti-agents. According to foreign studies, in recent years it has been noted that the incidence of SCD has declined significantly over the past 30 years, before the widespread use of implantable defibrillators, which emphasizes the importance of evidence-based therapy, including reperfusion interventions and secondary prevention. However, according to domestic authors, when analyzing statistical data in the Voronezh Region, the number of cases of sudden coronary death in 2005 increased by 46.6% compared to 2000.

Materials and methods: In three cities: Voronezh, Ryazan and Khanty-Mansiysk, a transverse (one-stage) observational study of the population formed by the population of randomly selected administrative districts of these cities was conducted. The total population of the studied population was 285 736 people. Of these, 76.4% are persons ≥18 years old, 46.0% are male population of all ages, 16 430 men ≥60 years (12.5% of the male population), 32,402 women ≥60 years (21.0% of the female population). The analyzed cases were registered for 6 months (Voronezh), 12 months (Ryazan) and 13 months (Khanty-Mansiysk) with subsequent calculation of the frequency of VCS per 100 000 population of the corresponding sex per year.

Based on deaths from sudden cardiac death recorded in medical certificates of death in patients with IHD, the prevalence of VCS registered in practical public health was estimated (per 100 000 population). Subsequently, this indicator was compared with the incidence of myocardial infarction (MI) recorded in medical death certificates as the cause of death, as well as the adjusted prevalence of VCS (per 100,000 population).

To clarify the frequency of VCS in the observed population, the working group of the study analyzed every case of death, regardless of the disease registered in the medical certificate of death. To this end, detailed information about the clinical picture was collected in the last days, hours of life and immediately before death (according to a pre-designed algorithm, a survey of relatives, death witnesses, ambulance staff, SMP documents was analyzed), anamnesis was updated (on outpatient cards , case histories, interviewing of attending physicians and relatives was also conducted), protocols for pathoanatomical research were requested and analyzed, taking into account updated clinical information Bani or forensics. Based on the data received, for each case of death, a conclusion was made for the presence / absence of criteria for sudden cardiac death and its association with coronary artery disease, with the involvement of experienced clinicians, specialists in functional diagnostics and pathologists.

To sudden cardiac death was attributed to "natural death due to cardiac pathology, which was preceded by a sudden loss of consciousness within one hour after the manifestation of acute symptoms; while the time and type of death were unexpected "(European Society of Cardiology, 2001). In addition, these criteria were supplemented by the definition of sudden cardiac death used in epidemiological studies: "unforeseen death within 12 hours from the time when the patient was last seen alive and in a satisfactory state of health." Such an extension of the criteria led to the inclusion of an additional 14.1% of cases of videoconferencing.

In calculating the analyzed prevalence rates of VCS (registered in practical health care and refined according to the results of the study) only cases of sudden cardiac death in patients with IHD were included, regardless of the nosological form of IHD. At the same time, IHD could only be detected for the first time only posthumously. The detectability index of the VCS was defined as the ratio of the frequency of the VCS registered in practical public health services to the frequency of the VCS refined by the protocol of the study.

Results and discussion: According to the diagnoses registered in medical certificates of death, the frequency of VCS in the male population was 69 cases per 100,000 male population per year, in female - 26 per 100,000 female population per year (ratio 2.7: 1 , p <0.001).

Given the reported incidence of fatal MI (24 cases per 100,000 in the male population and 23 per 100,000 in the female population, p> 0.05), the ratio of VCS and MI was identified as the main acute causes of death in patients with ischemic heart disease, which was 2 , 9: 1 for men

and 1.1: 1 for women. Thus, in the female population of VCS, as the cause of death in patients with ischemic heart disease, it is recorded approximately at the same frequency as MI, while in the male population, VCS is placed in the medical certificate of death almost 3 times more often than MI. Moreover, in the case of death of 30-39-year-old men, VCS is diagnosed 3.5 times more often (p = 0.0137) than fatal MI, in 40-49-year-old men it is 7.8 times more often, p <0.001 (Figure 1A). However, since the age of 60, VCS in men is registered as the cause of death less and less. As a result, in deceased men ≥70 years the frequency of diagnosed VCS and fatal MI becomes comparable.

Conclusion: The problem of mortality from cardiovascular diseases continues to remain relevant in Kazakhstan. In this case, the share of sudden cardiac death accounts for about half of all deaths. The SCD scenario is realized as a result of the development of acute left ventricular failure on the background of malignant ventricular arrhythmias, the manifestation of which is accompanied by violations of both systemic and regional hemodynamics, primarily from the side of the central nervous system. The consequence of this is the likely occurrence of irreversible changes on the part of vital organs and the development of a lethal outcome. Presence or absence of pre-existing structural pathology of the heart can be of decisive importance for adaptive changes in the parameters of cardiac output, and hence for the nature of the clinical course of arrhythmia. In this regard, the key value for the clinical interpretation of the malignant course of any arrhythmia, the definition of its life-threatening character should be considered: fainting, pre-obstruction, dizziness, hypotension, progression of heart failure, angina pectoris. The use of modern medical technologies, consisting in the implantation of cardioverter defibrillators, can effectively prevent the sudden cardiac death. In recent years, within the state project "Health" in several regions of our country, several federal cardiosurgical centers have been opened. Nevertheless, the number of implantations of cardioverter defibrillators does not meet the average needs per 1 million inhabitants of the country and is significantly lower than those of the leading European countries and the United States. The main reason for this situation is not so much the insufficient financing of this section, but, first of all, the lack of a systematic approach to an adequate clinical assessment of patients with cardiovascular diseases; different "understanding" of the patient sick by cardiologists, therapists, interventionists, cardiosurgeons; mediocre level of postgraduate education in this field, as well as the lack of quality audit of medical care aimed at preventing ARIA. These Recommendations are one of the stages of the creation and implementation in the shortest possible time of an effective program for the prevention of sudden cardiac death in our country. The working version of the solution to the problem of prevention of SCD is presented in the annex to these recommendations.

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¹М. Азаджанова, ¹З.И. Султанова, ²Ы.А. Аннаоразов
¹Оңтүстік Қазақстан медицина академиясы
²Қ.А. Яссаыи атындағы Халықаралық қазақ-түрік университеті

КЕНЕТТЕН ЖҮРЕК ӨЛІМІ

Түйін: Қазақстан Республикасында өлім кенеттен қайтыс 75% астамын құрайды. Көптеген жағдайларда (85%) КЖӨ-нің даму механизмдеріқарыншалықтахиаритмия – қарыншалық тахикардия (ҚТ) және қарыншалардың фибрилляция (ҚФ) кейіннен дамуымен асистологияболып табылады. Қалған 15% үлесіне тиесілі брадиаритмий және асистолии.
Түйінді сөздер: кенеттен қайтыс болуына байланысты, өлім, жүрек өлім.

¹Г.М. Азаджанова, ¹З.И. Султанова, ²Ы.А. Аннаоразов
¹Южно-Казахстанская медицинская академия
²Международный казахско - турецкий университет имени Х.А. Яссави

ВНЕЗАПНОЙ СЕРДЕЧНОЙ СМЕРТЬ

Резюме: В Республике Казахстан смертность от внезапной сердечной смерть составляет более 75% . Большинстве случаев (85%) механизмами развития ВСС являются желудочковые тахиаритмии – желудочковая тахикардия (ЖТ) и фибрилляция желудочков (ФЖ) с последующим развитием асистолии. Оставшиеся 15% приходятся на долю брадиаритмий и асистолии.
Ключевые слова: внезапной сердечной смерть, смерть, сердечной смерть.