

# **STEPS TOWARDS FORMATION OF THE STRATEGY OF INNOVATIVE-INVESTMENT DEVELOPMENT OF HEALTH CARE SYSTEM OF THE REPUBLIC OF KAZAKHSTAN**

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Steady development of Kazakhstan is based on firm foundation of socio-political and socio-economical reforms, performed during the period of independence and socio-economic reforms, under the leadership of the President N.A. Nazarbayev. Commitment of the President to the taken course, consistency and continuation of steps towards accelerated modernization is outlined in the message to the nation of Kazakhstan “New decade – new economical recovery – new opportunities for Kazakhstan”, which says: “Health of the nation – is compulsory component of the success of Kazakhstan in the achievement of its strategic goals”.

The size of government expenditures for health care system, including medical education, increased not only in absolute numbers, but also in percentage from Gross Domestic Product (GDP), in order to reach 4% according to the goals stated in the Government Program of reforming and development of health care system of Kazakhstan for 2005-2010.

During the last decade, beginning from 2000 till 2009, there were built 463 health care objects; realization of the National Program “100 schools, 100 hospitals” is continued; there were introduced modern medical centers of international level developed by the newest technological achievements. A number of breakthrough innovative projects were realized in the sector (medical clusters, holding and others), government-private partnership is developing due to strengthening of social orientation of the business. Alongside with construction of new health care organizations a material and technical basis of the existing ones are developing, introduction of new methods of treatment and diagnosis is continued, equipment with the high technological equipment, which sometimes has no analogues in the world. For the first time in the native practice foreign specialists are involved in hospital management. The system of financing and payment for medical services oriented on results is under the development.

In accordance with the Strategic plan of development of the Republic of Kazakhstan till 2020, approved by the Decree of the President of the Republic of Kazakhstan # 922 from February 1<sup>st</sup> 2010, the increase of human resources potential is planned to be provided due to complex modernization of domestic systems of health care and education and effective management of labor resources.

It could be stated without any exaggeration, that problems of modernization of the native health care system are standing as the most acute, since they are presenting the consequences of its development under the complex socio-political and socio-economical conditions, and only partly inherited hereditary from the previous system, and in the most part – are developed for the first time in the modern market environment.

*One should not hope that the increase of health expenditures will be followed necessarily by the elimination of the burden of problems. Despite the growth of budget financing and investment activity of health care, underrun of domestic health care system from the leading economically developed countries in total is obvious in doing correlations and comparative analysis of indicators of the activity.*

It is true that public health indicators shouldn't be used as characteristics of advantages of this or another health care system. Changes in population health indicators are explained not only and not even by health care system functioning, as by different other factors, the study of which will allow to determine priorities in population health protection. Rather, this is an objective and quite obvious reflection of deep processes, taking part on the given territory and shaping population health.

More and more researches are coming to conclusion that significant improvements in human health in the last century is related not only to increase of wellness, but rather to acceleration of technical progress. Here, technical progress means any achievements in the field of knowledge, and leads to practical improvement of things.

*High technologies and innovations, by themselves, as well as related rise of the price for medical services, are not the main reasons of the significant increase of monetary expenditures in health sector*

Despite the relatively favorable indicators of population health in US, in other economically developed countries (Japan, Finland, Sweden, Switzerland, and others), where the financial expenditures for health system are much lower, and these indicators are much better.

Therefore, modern public health needs the conduction of researches, which will allow to overpass desynchronization between costs and effects of health care, and to provide balance between investment and innovative development of the system.

Such studies are extremely important for Kazakhstan, where the own vision and idea about the main directions and priorities of modernization are just starting to develop.

## **Restructuring of specialized medical care to the population of the Republic of Kazakhstan.**

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At the current period in health sector there could be observed decrease of the effectiveness of organizational scheme of medical care, extent from the period of the soviet health care system, based on strict bimodal principle of structuring, presented by two all-sufficient and not much integrated with each other structures: ambulatory-polyclinic and hospital systems. The hospital sector of health care in Kazakhstan is characterized by over functioning of nomenclature and absence of systematic approach to the regulation of this process. Such a situation requires conduction of analysis of the existing network, with the aim of the further development of actions on increase of its effectiveness and bringing to accordance with modern international standards.

The goal of the research is to analyze the organizational scheme of rendering hospital care to the population. Statistical methods of study were used in this work. The object of study is organization of hospital sector of health care, as materials of research there have been used statistical data of the Ministry of health of RK, reports of NSCS n.a.Syzganov of the MH off RK.

Analysis of the existing normative-legislative basis, regulating questions of structuring of the system of hospital care showed that the part of norms survived from the soviet period and does not correlate with modern requirements, principles of evidence-based medicine and level of development of medical technologies, part of norms is absent at all. As a result, there could be observed big dispersion of structural parameters of the network by regions and between oblasts, and planning of new hospitals and investment in reconstruction of old ones is irrational in fact. Therefore today it is extremely important to create full complex of standards covering the whole complex of issues, starting from regulation of the network to internal structure of medical organizations.

The conducted analysis of structure and scheme of hospital care organization proves that in hospital sector of Kazakhstan there still existing irrational distribution of hospital beds by the levels of organizational hierarchy of medical care (local, rayon, oblast), resulting in inefficient exploitation of hospital beds in low-power hospitals and over functioning of big multiple-discipline hospitals and specialized centers. There is no integration in the activities of services of health and social care in exploitation of low capacity hospitals for the purposes of organization of medical-social care to population. Because of the concentration of specialized types of care and newest medical technologies in big organizations there could be observed an increasing gap in qualitative indicators of hospital care to the population of big cities and inhabitants of small towns and rural places. At that, an expensive hospital beds in specialized departments are used inefficiently because of the absence of organized system of rehabilitative treatment of patients in the departments of corresponding profile.

In total for patients services out of the total financing funds about 19,5 % is spent to PHC, to the specialized care - 76,8 % and for highly specialized medical care – 3,7 % of all expenditures. These disproportions are traditional and are requiring solution under the modernization of national health care system. Specialized medical care should be structured in the way that 60 % of its volume would be rendered at the primary level – inter rayon (inter oblast) specialized service.

Thus the analysis of hospital care to population shows the need in conducting restructuring of organizational scheme of rendering hospital care to population.

## **Maternity during the HIV/AIDS epidemic**

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The problem of HIV infection and maternity is one of the most important issues in public health, obstetrics and pediatrics. HIV infection in women of reproductive age defines the necessity to study the given problem, factors determining its development, approaches in prevention and treatment optimization, and expanding scientific research in the field of modern management of services on HIV/AIDS problems.

The existence of close relationship between the reproductive behavior of women and health status both of women and her child was empirically proved.

The growth of a number of women among people, living with HIV, is a disturbing tendency; therefore this question is given the most intent attention.

The whole seam of problems is related to the prevention of spread of HIV-infection. People should possess the whole volume of information, starting from how not to acquire the infection, and ending with the question of where to go for help, and are in general people's attitudes towards this problem.

Kostanay region is still on the fifth place in the Republic of Kazakhstan by speed of spread of HIV/AIDS epidemic. There were officially registered 842 cases of HIV-positive people in 2010, and among them – 9 children under 14 years old.

If in 2000 women made up 30,2%(16), now the officially registered number of HIV-positive women is - 38,7%(55). With underlying drug injections in 2000 there were - 100%(16), the number of sexually transmitted infection is growing, and there is a tendency for decrease of parenteral way of transmission - 32,7%(18) and increase of sexual way of transmission among HIV-infected women – 61,8%(34).

Taking into account the weight of people who acquired HOV infection through sexual contacts, and whose sexual partners are not injected drug users, the number of infected women will increase dramatically. In its turn, the number of children, who were born from HIV-positive mothers, will increase in direct proportion.

On a accrual basis in the region there were registered 66 childbirths in HIV-infected women, five children were infected from their mothers during pregnancy and childbirth, it is worth to note that during normal childbirths the probability of HIV-infecting of a child is fluctuating from 14% in European countries to 45% in Central and South Africa, making up in average 25%.

By the region in 66 HIV-infected mothers four children died under the age of 1 year, including three children with undetermined HIV status and one child died with the diagnosis of AIDS. AIDS in children – is one of 6 the most frequent causes of death. In Africa it stands on the first place. In Europe no more than 20% of HIV-positive children are surviving until the age of 10 years old. In Zambia about 50% of HIV-positive children are dying at the age of under 2 years old.

The risk of the birth of a child with HIV can be decreased to a maximum level by combination of antiretroviral therapy, in time treatment of maternal passages infections, decrease of the duration of childbirths, or cesarean operation prior to the beginning of deliveries.

Thus, the probability of infecting of a child from HIV-infected mother makes up in average from 25 to 35%. However, during the conduction of a full amount of in time preventive

measures the risk of infecting is decreasing to 1-2%, e.g. only one child out of 100 delivered children can be infected from HIV-infected mother. Therefore it is very important to appeal to maternity welfare center at the early terms of pregnancy, and to be observed during the whole pregnancy by obstetrician-gynecologist together with specialists from regional AIDS center.

The strategy of control over the reproductive behavior in HIV-positive women can actually decrease the risk of its spread and provide the reproductive health protection.

### **Primary disability and rehabilitation.**

At the present stage of development of Kazakhstan solution to the problems of disability and disabled people is a priority of social policy.

Crucial points in the solution of this policy are:

- prevention of disability;
- social protection, including the rehabilitation of disabled.

Background is determined by the presence in the social structure of society a large number of persons with signs of disability, which was confirmed by official statistics. According to the World Health Organization level of disability in the world average is 10%, that is, every tenth inhabitant of the planet is disabled. According to background information of the Ministry of Foreign Affairs of Russia, China 5% of the population are disabled, in the U.S. 19%, Russia 7% of the population belong to this category.

In Kazakhstan, according to the Ministry of Labor and Social Welfare as of 01.01.2009 year - the number of persons with disabilities of all categories totaled 466.3 thousand people (3% of the population). To study the total enrollment of persons with disabilities was conducted continuous research in the Republic of Kazakhstan for the period from 2001 to 2009 years with the assistance of the Ministry of Labor and Social Protection of Kazakhstan. The unit of observation is a person registered as disabled and living in our country. And the object of study was the population of disabled population.

Study of the primary disability in the period from 2001 to 2009 years show to reduce the absolute number of first time as disabled (FS) for the analyzed period.

Table 1. Number of first recognized as disabled in some regions of Kazakhstan for 2001-2009 years.

Name	2001y.	2002y.	2003y.	2004y.	2005y.	2006y.	2007y.	2008y.	2009y.
Republic of Kazakhstan	49027	46727	44658	42819	43957	43810	42760	44650	45420
Zhambyl region	2771	2481	2771	2654	2834	2833	2684	2732	2692
Shu town	60	58	59	62	53	54	51	61	51

In terms of the first recognition that disabled in Zhambyl region and in the Shu significant dynamics were observed.

Table 2. Intensive index of primary disability for 10000 population for 2001-2009 years.

Name	2001y.	2002y.	2003y.	2004y.	2005y.	2006y.	2007y.	2008y.	2009y.
Republic of Kazakhstan	32,7	31,2	29,9	28,4	28,8	28,5	27,7	28,2	28,4
Zhambyl region	28,1	25,3	28,2	26,7	28,3	26,1	26,4	26,8	26,9
Shu town	26,3	26,1	26,2	26,4	25,6	25,7	25,3	26,4	25,3

Intensive index of Zhambyl region ranged from 25.3 to 28.3 per 10000 inhabitants in the town of Shu 25.3 to 26.4.

Table 3. Analysis of primary disability among the adult population for the years 2001-2009

Name	2003	2004	2005	2006	2007	2008	2009
Republic of Kazakhstan	35,6	34,4	32,6	32,1	32,1	33,3	33,6
Zhambyl region	33,8	33,8	33,9	33,7	33,7	33,7	33,7
Shu town	17,6	16,8	15,4	14,9	12,8	14,7	12,8

This table shows a comparison, the Shu in the Zhambyl region on the primary disability for 10000 people. Official statistics have reliable data only on the causes of primary disability of the adult population over 16 years. This indicator is the level of primary disability has tended to decline.

Analysis of the contingent for the first time recognized as disabled adults, taking into account the classes of disease on the International Qualifications Diseases 10 review suggests that, traditionally, the largest share in the structure of the primary disability for many years occupied by circulatory system diseases, malignant neoplasms, injuries and neuropsychiatric disorders. Dynamics of primary disability of cardiovascular disease was in 2001 - 21,5%, 2002 - 22,8%, 2003 - 23,6%, 2004 - 23,8%, 2005. - 22,5%, 2006. - 22,5%, 2007. - 23,8%, 2008. - 23,7%, 2009. - 23,9%.

Also remains consistently high number of primary disabilities due to malignant neoplasms. Thus, the level of the first recognition of disabled persons according to the nosology of 2001 - 16,8%, 2002 - 17%, 2003 - 17,3%, 2004 - 17,9%, 2005. - 15,9%, 2006 .- 16,4%, 2007. - 16,9%, 2008. - 17,9%, 2009. - 18,2%.

Third place in the rank structure of the primary disability, with a tendency to occupy the continued growth of trauma, as well as the Republic of Kazakhstan. In 2001, the rate of primary disability among the injuries was 11% in 2002 -11,2.% In 2003-11, 8% in 2004-12, 3% in 2005-12, 9% in 2006-2009, - 14,5%, 14,8%, 15%. Along with the above noted increase in neuropsychiatric disorders and tuberculosis.

Considering the level of the first recognition of disabled persons among the adult population over the years analyzed, we can conclude that the leading nosologies in the structure of primary disability are diseases of the circulatory system, malignant neoplasms, trauma, neuropsychiatric disorders and tuberculosis.

The structure of disability severity in different years is different: In the population of patients with the first category in 2001 was equal to 11,2%, but then began to decrease essential to 8,4% in 2009. A similar tendency was observed in group of patients who mounted a second group of disability from 60% in 2001 to 44,5% in 2009. The most noticeable dynamics observed among people with disabilities the third group. The growth of the third group of persons with disabilities in 2005 was due to significant changes in legislation and administration in the republic of the Law "On Social Protection of Disabled Persons", regulating the rights of the disabled to rehabilitation and full integration into society, thereby increasing the growth of persons with 28,8% in 2001 to 47,1% in 2009. Age structure of primary disability, basically, was up 80% aged 15-60 years. Since 2005, after the Act has increased the number of disabled persons of retirement age to 40%.

The main cause of disability of persons of retirement age are diseases of the circulatory system, yielding up to 75% of cases.

This article examines the three leading causes of disability:

1. due to circulatory diseases;
2. as a result of malignant neoplasms;
3. injury, which, as we know, are major causes of death.

Given the fact that every day according to world statistics, 23 thousand people are people with disabilities importance is the rehabilitation of the disabled and elderly.

Addressing disabilities, their medical and social rehabilitation and integration into society, the problem of rehabilitation treatment and rehabilitation of sick and disabled is the subject of international cooperation.

Prevailing socio-medical situation requires a systematic and integrated approach. Well-established system of rehabilitation in the countries of Western Europe, the active participation of the governments of these countries, public organizations and persons with disabilities themselves have led to a high degree of integration into society. Our rehabilitation, despite the fact that rehabilitation programs, while only limited to the issuance of handicapped technical support (compensation) funds on the testimony of spa treatment, means of transportation (wheelchair), prosthetic and orthopedic care, social assistance at home. Despite increased funding, the number of persons with disabilities are integrated into society, remains the same.

The lack of explicit criteria for the diagnosis and treatment, the definition of surge capacity and the forecast for the Disabled, in its specific characteristics are defined as the status of the disabled, and the ultimate goal of rehabilitation, creating a number of difficulties and problems.

Annually developed individual rehabilitation programs do not meet such standards, reliability, since the results are not measurable, is not determined by the expected efficiency, there is no assessment meeting the disabled provided rehabilitation assistance. All this reflects the lack of evaluation of the quality of rehabilitative care, modern perspective on the essence.

Having analyzed the situation in Shu town in the Zhambyl region, one can conclude that the leading nosologies in the structure of primary disability are diseases of the circulatory system, malignant neoplasms, injury.

An increase in the age structure of primary disability of persons of retirement age, cause of disability, disease of the circulatory system up to 75% of cases.

To ensure the rapid integration of disabled persons in society should:

1. Implementation of comprehensive rehabilitation, including medical, social and professional aspects to achieve an acceptable quality of life of persons with disabilities.
2. Standardization of rehabilitation programs, recognition of the importance of the state of the rehabilitation process not only for the disabled, but also for society.
3. The active participation of disabled persons in the rehabilitation process.

Daulbayeva S.A.

The demographic situation in Shu town in the Zhambyl region for 2008-2009.

Population of Shu according of District Statistical Office and census carried out 2 times a year in spring and autumn, the district network is very different.

Table 1. Information of District Statistical Office

№	Name	2008	2009
1	Adults	20309	21104
2	Teens	1685	1492
3	Children under 14 years	11064	10551
4	Total	33058	33107

Table 2. Census's information

№	Name	2008	2009
1	Adults	24569	28899
2	Teens	1658	1492
3	Children under 14 years	11104	11520
4	Total	37331	41911

The difference in 4534 is explainable by the fact that in Table 1, the data of the adult population who have a residence permit for permanent residence, and Table 2 indicates the adult population, which lives according to the addresses, but does not have a residence permit. The increase in 2009 to 4580 compared to 2008 year, there was an increase of 12,3%.

Table 3. Adults of Shu

№	Name	2008	2009
1	Men	11911	13853
2	Women	12456	15041
3	Among women of childbearing age (15-49)	8414	8603
4	Total	24569	28899

In 2008 to 1000, women accounted for 956 men in 2009 on the 1000 women 920 men of Zhambyl region 844 women per 1000 men in Kazakhstan at 1000 men had 1,079 women at the same time for every 100 girls born boy 102-103. Natural population growth was in 2008, 453, and in 2009 566, that is the natural growth rate increased. The overall rate of natural increase per 1000 inhabitants amounted to 13,4% against 17,1% in 2009.

In 2008, was born 845 children in 2009, 890 children, 45 more than in 2008.

Total fertility rate per 1000 population in 2008 amounted to 25,5 against 26,9 in 2009. The increase in the total population, except for natural growth, also influence the migration process. Migration growth for 2008 and 2009 amounted to 734 people, including from the CIS countries (Kyrgyzstan, Russia, Uzbekistan) 688 people, and from China 46. The main migration exchange of the country comes from the CIS countries. In the structure

of migration flows arriving in Shu town on ethnicity are a significant part of the Kazakhs - 546 people, the second largest Russian - 120, and Turks - 68.

The number of registered deaths in 2008 totaled 392 in 2009 324 that was 12% versus 9.8% of them died at home in 2008, 214 people, representing 54% of all deaths, in 2009, 185, representing 57% of the total number of registered deaths.

At the age structure of adult mortality prevails at home mortality among people aged:

- 81 and older, in 2008, 108 (41.4%), in 2009, 97 (53%);
- from 71 to 80 years in 2008, 44 (25%), in 2009, 25 (14%);
- from 61 to 70 years in 2008, 25 (11.6%), in 2009, 37 (20%);
- from 51 to 60 years in 2008, 20 (9.4%), in 2009, 14 (7%);
- up to 50 years in 2008, 16 (7.9%), in 2009, 12 (6%)

prevailing mortality among elderly.

Deaths per 1000 population at home was in 2008, 214 - 6,4%, in 2009, 185 - 5,5%.

Among the major classes of causes of death for the largest share of the population has the disease of the circulatory system, which accounted in 2008 - 192 (50%), and in 2009 - 112 (34.5%) in second place on the importance of place of cancer in 2008 - 43 (11%), in 2009 - 45 (14%), accidents, poisonings and injuries account for 46 (11,7%) in 2008 and in 2009 - 28 (8.6%).

Of the total of deaths from circulatory disease mortality from coronary heart disease is 81 (59%) in 2008, and 56 (50%) in 2009, and from vascular brain lesions 45 (32.8%) in 2008, and 45 (40%) in 2009.

Diseases of the circulatory system (hereafter DCS) the last three decades are the most common causes of disability and mortality, not only the population in Shu, but also throughout the Republic of Kazakhstan.

The total incidence over the past years has grown so much that amounts to 187,04 in the SHU, and 157.17 of Zhambyl region, the Republic of Kazakhstan on the indicator Memorandum 200.0 in 2009.

To improve the situation with the disease of the circulatory system within 2 years held professional medical inspection certain categories of the adult population in the identification of diseases of the circulatory system.

In 2008 it was planned to professional medical inspection 4249 people, examined 4409, identified 1,415 patients, which accounted for 32% of the total, have improved 824 (58.2%) registered by the 591 (41.8%) of the number of identified patients .

In 2009, planned 2578, examined 100%, identified 773 patients (29,9%), have improved 621 (80%), taken at the dispensary registration 112 (20%) of those identified.

## **Modern condition and perspectives of computer literacy growth among health care specialists on the modern stage of development of information-communication technologies (ICT)**

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Currently Kazakhstan is on the stage of the development of informational society, the main resource of which becomes information. The specific feature of the informational society is increase of the role of information and knowledge in the society's life.

Computer and information literacy are reflecting informational-technological aspect of informational culture. Computer literacy can be characterized as knowledge, skills and abilities to understand informational and communication technologies (ICT), including equipment, software tools, systems, networks (local network and Internet) and all other elements of computers and telecommunication systems.

Informatization as the most accessible and effective mean of the improvement of quality, profitability of health care sector and increasing of the effectiveness of health organizations management, is given and will be given a priority attention from the side of the government.

At the present time one of the problems of informatization in health care is considerable imbalance between growing level of equipping of medical organizations with technical-communication facilities and insufficient computer literacy of medical professionals: middle medical personnel, medical statisticians, health managers.

In order to determine the level of possession with computer technologies by the specialists of the field, there was conducted a sociological study among 4955 medical workers of 66 practical health organizations of South, Central, North regions, and Almaty city, and of ten republican SRI and SC of the republic.

The real situation regarding the computer literacy among medical workers is unfavorable. So, among the questioned employees of medical organizations of practical health care (polyclinics, hospitals, etc.) - 57,3% have no skills of working with computers at all. Situation among the members of scientific and research collectives is somewhat better, only 30,9% can not work with computer, however, in the context of the development of informational society, possession with technological methods of operating various information in big volumes is vitally important professional criterion.

Development of computer technique and informational technologies dictates the necessity of determining functional and systemic computer literacy, which are the base of professional

computer literacy, including abilities of flexible application of computer facilities in the solution of various professional objects with the aim of increase of medical services quality.

Among the medical workers of practical health care 90,5% of them can work only in text mode, which is equivalent to elementary computer literacy level. The average level - 8,2%, high level of computer literacy was found in 1,3% of respondents. At the research institutes and centers, where is observed a considerable concentration of research-education potential, these rates are as follows: 78,7% of employees have an elementary level of computer literacy, 14,7% posses functional computer literacy and 6,6% of high level computer literacy, and these is not an optimistic figures.

Study of the world experience in the field of overcoming of informational inequity and analysis o the current situation in Kazakhstan presents the acute necessity in conducting actions directed towards the strengthening of potential and increasing computer literacy, development of domestic IT-specialists of new compatible level.

In order to develop legal basis for achievement of goals, stated by the Program of decreasing an informational inequity in the Republic of Kazakhstan, the following actions are anticipated: to introduce courses on ICT into the educational plan of the system of qualification improvement for health care specialists with corresponding certification of the educational level; inculcation of compulsory presence of the document approving computer literacy during periodic attestation of health professionals.

## **Organization of the specialized oncogynecological care in health organizations of obstetric-gynecological type.**

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**Health care system of Almaty city started the realization of the 2<sup>nd</sup> stage of the Governmental program of reforming and development of health care of the Republic of Kazakhstan for 2005-2010, directing its actions on achievement of expected results of effectiveness: transforming PHC by systemic stage by stage strengthening and development of the institute of general practice physician; reorganization and improvement of hospital and emergency care, strengthening of continuity on all stages of rendering medical care; medical services quality improvement by inculcation of international standards and creation of competition between medical organizations; radical reforming of medical education; actual shift of the emphasis from treatment of already developed diseases to preventive actions and health promotion of “healthy” people»; providing joint responsibility of citizens, employers, and government individual and population health protection and promotion..**

High prevalence of oncological pathology among city inhabitants proves the social significance of oncological services. Rating of Almaty by incidence rate of malignant neoplasms was changed from 6<sup>th</sup> to 7<sup>th</sup> place among the regions of the Republic of Kazakhstan after Pavlodar, East-Kazakhstan, North-Kazakhstan, Kostanay, Karaganda and Akmolinsk regions) and exceeded the republican level by 17% (184,7 per 100 population).

It was detected that in 2008 in health organizations of Almaty city the plan of prophylactic examinations on diagnosis of preoncological diseases and breast cancer made up 43834. At that there were examined 44308 women, which equals to 101,1% from total planned female population. While in average by the republic this indicator made up 95,9%.

The study presented that during the mammographical examinations there were diagnosed diseases of breast in 10174 women, which equals to 23,2% from total number of examined. At that average republican weight of this indicator was on the level 8,3%.

Therefore, popularization of contr-oncological information should be conducted more actively, using mass media, taking into account WHO recommendations; due to improvement of PHC organizations activity to increase the quality of targeted prophylactic examinations, with compulsory endoscopic examination of gastrointestinal tract for people above 40 years old once a year; compulsory finger examination of rectum for those over 30 years old, mandatory conduction of mammography to women above 40 years once a year, taking of a smear for oncocytological examination in women above 20 years old once a year with the aim of reduction of oncogynecological pathology in organizations of obstetric-gynecological type.

## **PREDICTION OF THE RISK FOR DEVELOPMENT OF OCCUPATIONAL DISEASES OF NOISE AND VIBRATIONAL PATHOLOGY AMONG THE WORKERS OF CHROMIUM INDUSTRY**

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It is an accepted opinion that employment experience in the profession more than a half from the average term of occupational diseases development in the given profession is considered to be a significant risk factor.

The realization of the risk is determined by individual responsiveness of the organism, therefore for conduction of the complex of preventive measures it is necessary to define workers who are most subject to the influence of unfavorable industrial factors.

**Study methods.** The study objects were 430 workers of leading professions, occupied at Donskoy “Kazchrom” industry.

Preliminary assessment of risk was conducted by the Hygienic criteria of evaluation of labour conditions by indicators of health hazards and dangerousness of industrial factors, the severity and intensity of labour process (Guideline R 1.04.001-2000) by exceeding MCL.

Development of acceptable work experience and prediction of hearing disturbances under the influence of noise on workers occupied at open winning and dressing of chromium ore on the factories of Donskoy MCC was conducted according to ISO - 1999-75 «Acoustics. Detection of the occupational influence of noise and assessment of hearing disturbances caused by noise».

Development of acceptable work experience and predictions of health disturbances because of the influence of vibration on workers, occupied at various industrial factories was conducted according to ISO - 5349 «Vibration. Effect of vibration and risk of development of vibration disease».

**Study results.** For assessment of predictions of health disturbances and risk of development of occupational diseases, related to the influence of intensive noise we conducted complex hygienic studies of the working conditions of labor force, occupied at open winning and dressing of chromium ore at Donskoy MCC, allowing the calculation of work experience dose capacity by noise and vibration.

Under the influence of general vibration, transmitted through footplate on the body of sitting or standing man, changes of various extent are occurring in the central nervous and cardio-vascular systems, in metabolic processes, vestibular apparatus, including sciatica and other forms of radiculitis, osteochondrosis, lumbago and etc.

Under the influence of local vibration, transmitted through hands, diseases of neuromuscular and locomotor systems are taking place usually.

Thus, based on calculation of work experience dose intensity of noise and vibration it is possible to determine acceptable work experience under the influence of unfavorable industrial factors and to predict the risk of occupational diseases development.

Realization of the complex of measures, aimed to decrease the probability of injuries to health and risk of occupational diseases development in workers of chromium industry, will allow maintaining health of the workers of a number of professional groups.

Currently, unfortunately, we have to acknowledge that in most of the regions of the country the system of secondary prevention is fully destroyed, and primary prevention does not provide the required effectiveness because of the fact, that transformation in the economical sector negatively influenced the working conditions in the most of its fields. .

In this situation the development of a new organizational-legal infrastructure of occupational medicine and labor protection is required, the conceptual base of which is presented by the theory of professional risk.

Acceptance of the conception of professional risk became an important stage of the further extension of preventive orientation of occupational medicine, because in the process of the risk analysis the real quantitative assessment of its level is being realized; the health damage is being quantitatively assessed; social and economical harm; the possibility to range the priority of preventive measures based on a reasonable basis is appearing, e.g. the possibility to manage the risk.

## **MORTALITY FROM ISCHEMIC HEART DISEASE IN PATIENTS WITH TYPE 2 DIABETES.**

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Diabetes – is one of the most important factors of cardio-vascular diseases development, which are the main cause of death in patients, three out of four diabetic patients die from

ischemic heart disease. Presence of diabetes increases the risk for IHD development in men for 66%, in women - for 203%. In diabetic patients IHD is diagnosed 3-6 times more than in people of the same age without diabetes.

The most frequent characteristic causes of mortality among patients with Type 2 Diabetes and IHD are cardiac infarction, heart failure and sudden death.

Aim of the study: to determine the weight of patients with type 2 diabetes among patients died from IHD and to analysis of mortality.

Materials and methods: 44 cases of death in the therapeutic department of Lisakovsk CCH were analyzed for the period of 2006-2009 with the aim of analysis of morality and determination of the weight of patients with type 2 diabetes among died patients.

Results: out of 44 death cases the weight of patients with type 2 diabetes made up 17% (9 cases). By gender: 3 men (33 %), 6 women (67 %), morality among women was by 2 times higher than in men. Among the dead 1 (11 %) of patients in the age below 60 years old, 4 (44 %) – in the age of 60-70 years old, and 4 (44 %) – above 70 years, the average age of died patients - 67 years old. Mortality of patients during one day was equal to 3 cases (33 %).

In all the cases the cause of death – cardiac infarction (out of them 64% transmural, and in 36%- macrofocal). Primary cardiac infarction made up – 44%, repeated – 54%, recurrent course in 30% of cases.

In 3 patients (33%) cardiac infarction was complicated by combination of cardio shock with lungs edema, and in 2 patients ( 22 % ) – by lungs edema.

The duration of having diabetes up to 10 years was revealed in 4 patients ( 45 % ), more than 10 years– in 5 ( 55% ). In half of the patients diabetes was at the stage of sub compensation, and in other cases there was revealed decompensation of diabetes.

Autopsy was conducted in 6 cases. According to autopsy data all cases of cardiac infarction were detected at the stage of necrosis. In all cases there was observed hypertrophy of the left ventricle. In 4 patients ( 66 % ) there were revealed sclerosis, lipomatosis, dystrophy of island effect pancreas, in 3 patients ( 50% ) – diabetic glomerular sclerosis, in 2 patients (33% ) postinfarction cardiosclerosis.

All died patients suffered from hypertension of the 3 degree, and in the most half of patients - 57% was revealed dislipidemia.

## **Early detection of atherosclerosis' markers and the results of prophylactic treatment of macroangiopathia in patients with diabetes**

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According to statistical data of the Ministry of Health of the Republic of Kazakhstan for 2008, morbidity rate of blood circulatory system diseases per 100 thousand population made 2170,5, and mortality due to diseases of this system achieved 489,6, which makes up 50,3% of the total mortality rate. Out of them the number of ischemic heart disease per 100 thousand population was 444,4 in the same year.

Thickness of the intima-media complex of arteria carotis – is an independent risk factor of the development of cardiovascular complications. Growth of this indicator is associated with increase of risk for stroke, myocardial infarction, chronic heart failure. The main reason of death in patients with type 1 and type 2 diabetes is complications of cardiovascular diseases. The total mortality rate in these patients during in 40 years after diagnosing diabetes reaches 50%, when in the absence of this disease it equal to about 10%. The main reasons of mortality are ischemic heart disease and cerebra-vascular diseases, the frequency of their development in diabetes increases to 2-5 times in comparison with that in total population without diabetes.

**The aim of the research.** Early detection of atherosclerosis' markers in young patients with diabetes and analysis of the prophylactic treatment of macroangiopathia they have been exposed to.

**Methods and materials.** The number of examined population is 111 people. Out of them there were 50 people with type 1 diabetes, with the average age of  $27\pm 1,0$  years, 30 people with type 2 diabetes, in the average age of  $32\pm 1,2$  years, and 20 people in the control group, having no diabetes, in the age of 19-38 years old. Additional 10 patients with diabetes were examined in the age of under 18 years old (5) and above 40 years (6).

**Conclusions.** In young patients with diabetes the thickness of intima-media of arteria carotis is greater than in people without diabetes of the same age. At that, alterations of walls of peripheral arteria are more frequent in patients with diabetes compared to people without diabetes. The thickness of the intima-media is influenced by the age and smoking factors. Conduction of the course of prophylactic treatment of macroangiopathia in patients with type 1 and type 2 diabetes brings to regression of vascular walls alterations. The early detection of

vascular walls alterations is possible in patients with diabetes and conduction of prophylactic treatment.

## **Women and HIV-infection, pregnancies outcomes, situation analysis by Kostanay region for the period of 2000-2009.**

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At present time there are more than 33 mln. HIV-infected people all over the world, more than 13 thousands in Kazakhstan. The number of people living with HIV/AIDS is consistently increasing. Annually about 2 thousands of HIV-infected persons are detected in the RK, 30-33% out of them are women.

By Kostanay region there were registered more than 800 HIV-infected persons. The weight of women out of all cases of HIV-infected people was 32%. At that, there is a clear tendency for annual increases of the weight of HIV-infected women.

The first cases of HIV-infection among women in the region were registered since 2000. From that period there were registered 274 HIV-infected women. The increase of the number of HIV-infected women proves the existing tendency for the growth of sexual transmission of HIV-infection.

The parenteral way of transmission of HIV-infection still remains the main way of transmission, however, the growth of sexual way of transmission is progressively increasing, and during some periods (2005, 2006, and 2007) they were even equal. The growth of sexual way of transmission of HIV-infection is an extremely negative indicator and reflects the appeared tendency of HIV-infection spread not only among vulnerable population (drug-users, prostitutes), but also among the general population including children.

The analysis of epidemiological investigation of the ways and factors for HIV-infection transmission among HIV-infected women in Kostanay region during the period of 2000-2009 has revealed, that in 58,2% there was detected a sexual way of HIV-infection transmission, and in 36,2% - parenteral, in 5,6% - undetected. Thus, unlike the general population of HIV-infected, among women the main way of HIV-infection transmission is sexual.

It is well known that the most vulnerable part of the population for HIV-infection is youth. In the age perspective 95,3% of HIV-infected women are in the reproductive age (15-49 years old), including 63,1% - in the active reproductive age (20-29 years old).

With the growth of the number of HIV-infected women in direct proportion is increasing the number of pregnancies in HIV-infected women, and accordingly is increasing the number of children, who are born from HIV-positive mothers.

**Conclusions:** With annual growth of the number of HIV-infected Kazakhstan citizens the number of HIV-infected pregnant women is growing accordingly, and also of children, who were born by HIV-infected mothers. In such conditions, the problem of prevention of the vertical transmission of HIV-infection from mother to child becomes more and more important. The strategy on control of reproductive behavior of HIV-positive women can actually decrease the risk of its spread.

**Ways of solution:** 1. It is necessary to study and optimize the tactics for conducting consultations in the centers for AIDS prevention and control, as well as at the maternity welfare centers. It would be reasonable to conduct the consultations on a constant basis during the whole period of pregnancy for behavior correction, increase of the adherence for antiretroviral therapy.

2. To achieve the provision of the special control for detection and in time pregnancy registration of women from high risk groups (drug-users, alcoholics, commercial sex worker, and others) for early testing on HIV and decision of the question about possibility for pregnancy interruption by medical and social indicators;

3. Joint, together with specialists of RC AIDS, observation of HIV-infected pregnant women, keeping the conditions of confidentiality, excluding stigma and discrimination, for provision of high quality prevention of HIV infection transmission from mother to child.

4. Rational management of labour in HIV-infected women.

5. Postpartum observation of HIV-infected women in maternity welfare centers for intime conduction of the complex of actions, including counseling on issues of contraception and pregnancy planning.

6. Continuity in the work of the specialists of AIDS centers, physicians obstetrician-gynecologists and pediatricians, social workers.

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## **Morbidity of women of child-bearing age living in Khorezm region and its particularities**

One of the main principles of formation of health care system, providing population health improvement and promotion of the Republic of Uzbekistan, is creation of the effective system of mother and child health care.

The main aim of our research is study and assessment of the morbidity of women at child bearing age in environmentally unfriendly Khorezm region of the Republic of Uzbekistan (further – of the region) by appealability to health care organizations and conduction of comparative analysis, obtained results of average indicators by the Republic and ecologically more favorable Tashkent region.

### **Materials and Methodology**

With the aim of examining the morbidity of women of child bearing age the data was used that was obtained from the Data analyzing center of the Ministry of Health of the Republic of Uzbekistan, Regional Health management Agency, and results of conducted medical examinations. In statistical analysis of the data there were widely applied methods of social hygiene and sanitation.

### **Results of the analysis**

In research there was detected that morbidity of women of child bearing age exceeds by 13,4% the level of morbidity among all women and equals to  $780,4 \pm 1,54$  diseases per 1000 women of child bearing age, which is also 1,3 times higher than average rates for Tashkent region and the Republic in general ( $P < 0.001$ ). In direct study of appeals by women of fertile age similar data was obtained - 772,2‰. Diseases of digestive system among women of child bearing age (by prevalence) occupy the 1<sup>st</sup> place and equal to 20,3% out of the total number of diseases ( $158,5 \pm 0,69$ ) and exceed the rate of prevalence of these diseases in Tashkent region on 2,6 times, and in 2,4 times exceed average republican level.

On the second place by prevalence are diseases of respiratory system ( $119,7 \pm 0,60$ ), with prevalence rates lower than in the compared regions. On the third place by the prevalence in the region (10,2%) are complications of pregnancy, deliveries and puerperium ( $80,0 \pm 0,47$ ). This rate is higher than the corresponding indicator for Tashkent region for 1,7 times, and for 2,5 times higher than average republican level. The level of morbidity with other classes of diseases, besides cancer, psychiatric disorders, respiratory system diseases, diseases of muscles, bones and connectives, are relatively lower than in Tashkent region.

In comparison with the parameters of Tashkent region and Republic in general incidence of infectious and parasitic diseases in the region are higher than the republican level for 1,8 times, and in Tashkent region – for 1,4 times. Morbidity of diseases of blood and hemopoietic

organs is higher accordingly in 2,8 and 2,2 times, diseases of skin and skin structure – for 1,6 and 1,5 times, injures, poisonings and accidents –for 1,6 and 1,3 times. The data shows a significant influence of the negative environmental factors on health of women of child bearing age in the region ( $P<0.001$ ).

During the period of 1998 and 2000 there was observed significant growth, and than decrease of the morbidity rate among women of child bearing age (1998 – 632‰, 1999- 981,6‰, 2000 – 725,1‰).

Gastritis and duodenitis make up 5,4% of widespread allover the republic diseases of digestive organs, 4,2% of diseases of the respiratory system organs are acute respiratory viral infections, and bronchitis equal to 2,6%. 14,0% of hemopoietic system diseases are composed by essential hypertension, and ischemic heart disease – 7,8% from total number of diseases of the given class. Diseases of peripheral nervous system equal to 11,2% of total number of diseases of nervous system and sensory organs.

It should be noted that the main part of diseases of child bearing aged women is constituted by diseases of class IV, VI, VII, VIII, IX and X. By the Republic in general, given classes of diseases make up 74,3% of total number of diseases, registered among women of child bearing age, 69,5% - in Tashkent and 68,2% -in Khorezm regions. It is obvious that by the given 6 classes of diseases morbidity is for 1,3 times higher than the in Tashkent region and for 1,2 times higher than the average republican level ( $P<0.001$ ).

Based on the given above statistical data and results of the own research, it could be stated that morbidity among women of child bearing age in Khorezm region (1998-2000) is higher than in Tashkent region and the Republic in general, both in comparison based on official statistical data, as well as based on the results of the own research. High level of appealability by diseases was observed among women of 25-29 years old (1066,0‰).

In the analysis of the dynamics of appealability of women of child bearing age to health organizations in all regions under the study for the period of 1996 – 2000, it was detected that morbidity in Khorezm region decreased for 1,7 times from 1996 till 1997, and did not changed significantly in the further periods.

### **Conclusions:**

1. Total morbidity of women in Khorezm region is by 7% higher than the morbidity of the whole population of the region, and morbidity of women of child bearing age - by 46,8% higher than morbidity rate of women in the region.
2. Total morbidity level of women in the region is higher than republican level and morbidity level in Tashkent region for 1,5 and 1,4 times accordingly.
3. Diseases of blood and hemopoietic organs, sensory organs and nervous system organs, circulatory and respiratory systems, digestive and urogenital system equal to 74,3% from all diseases revealed in women of child bearing age by the Republic, 69,5% – in Tashkent, and 68,2% – in Khorezm regions.
4. Diseases of the digestive system are leading in the region by the prevalence rates, and constitute 20,3% of all registered diseases ( $158,5\pm 0,69/1000$ ). 15,3% of all diseases are composed by respiratory system diseases ( $119,7\pm 0,60/1000$ ) and 10,3% of total morbidity are made by complications of pregnancy, deliveries and post delivery period ( $80,0\pm 0,43$ ).
5. The age structured analysis of the appeals by women of child bearing age to health care organizations of the region revealed that high rate of morbidity falls to women of 25-29 years old (1066,0/1000).

## **Assessment of the frequency of hospitalization of military women with inflammatory diseases of female genitals**

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Increases of the effectiveness of treatment-preventive obstetric-gynecological care to military women and members of military personnel families is conducted on the base of introduction of modern methods of diagnosing, treatment and medical rehabilitation, improvement and increase of professional qualification of physicians and other medical workers. At that there are conducted on a regular basis monitoring of obstetric and gynecological morbidity among military women and members of families; the particularities of the influence of military labour on incapacity for work of female personnel are studied and effective sanitary actions are inculcated.

The results of the study of military women show that in 2009 there were hospitalized overall 30,4% of female military personnel with inflammatory diseases of female genitals out of their total morbidity

Therefore, it should be noted that the main reasons of gynecological morbidity with inflammatory diseases of female genitals are: overcooling, because of working under the conditions of cold rooms and frequent drill-square formations in cold seasons; absence of sanitary-hygiene rooms; field-studies in cold periods and absence of sanitary-hygiene facilities at this, and etc.

## **OPTIMIZATION OF SURGICAL SERVICE TO PATIENTS WITH HAND INJURY**

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The research is devoted to study of reasons for disablement of patients with injuries of hand. At the example of the department of reconstructive microsurgery during the last 5 years on the example of 1473 patients it was showed that modern diagnosing, high quality initial

debridement, proper transportation of hand segments, performance of reconstructive surgical operations on hand by one surgeon, having the skills in microsurgical technique, allow to decrease disablement, time of temporary loss of ability to work and in the maximum short time to return the patient to adequate labour activity.

Among the traumas of locomotor apparatus hand injuries constitute 30-50%, and cases of loss of working ability by that reason achieve 30% of the total number of disabled due to various kinds of injuries.

At the present time medical care to patients with hand injuries is rendered at surgery and traumatology departments of rayon and city hospitals, leading to frequent unsatisfactory results of treatment and, as a consequence, to high level of disability.

Taking into account the fact that in the Republic annually registered number of injuries and accidents equals to 1 million, and that there is a tendency to steady increase of severe, multiple combined hand injuries, it was decided to continue the study of this problem.

The aim of the research is the improvement of organization of specialized care in patients with hand injuries.

#### **Materials and methods.**

Since 2005 in the republican centre of microsurgery within the NSCS n.a. A.N. Syzganov there were examined and operated 1473 patients. Majority of cases were marked among men – 76,2%. More than 60% of all appealed persons were constituted by people of young and middle age (under 45 years). The most number of appeals (86,8%) was noted in summer-autumn (June-November) period.

Research conducted by the materials of the department shows that during the studied period of 5 years the number of persons approved annually as disabled due to hand injuries, increased 2%. There was increase also of intensive indicator of primary disability of the population because of the hand injury. The majority of them (up to 40%) falls to age group of 41-50 years old, while in total more than 70% of person with persistent loss of ability to work was composed by the age of 31-60 years. Among the reasons of disability the most frequent were amputation stumps of fingers and hand (55,3%), burn consequences (21,2%), and also old injuries of tendons and nerves (23,5%).

Therefore, our experience has shown that the existing facilities of specialized rehabilitative treatment of patients with hand injuries and its after-effects are not being used in full. Timely diagnosis, high quality initial debridement, proper transportation of hand segments, performance of reconstructive surgical operations on hand by one surgeon, having

the skills in microsurgical technique, allow to decrease disablement, time of temporary loss of ability to work and in the maximum short time to return the patient to adequate working activity.

## **THE EFFECTIVENESS OF CONSERVATIVE TREATMENT OF PATIENTS WITH UROLITHIASIS**

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It is a well known fact that any method of operative treatment of urolithiasis eliminates only the consequences of the disease not influencing on its roots, therefore a conservative treatment of urolithiasis is still important nowadays. During the six years (2001-2006) 136 patients were given the conservative treatment of urolithiasis.

Various conservative methods of removal of stones from kidneys and ureters were applied, and stones have been recovered in 98 (72 %) patients. Patients were arriving to the republican clinical centre "Urology" for treatment when treatment at the place of their residence didn't lead to positive result.

In order to conduct litho-kinetic therapy we applied the technique developed by us (the efficiency proposal № P-31 from April 22<sup>nd</sup>, 2007), including application of water loading in following structure of 1,5л boiled water or alkalinescent mineral water with 3 lemons squeezed out in it, added 50 g. glycerine and 30 g. natural mountain honey. All mixes up and used by the patient within 30-40 minutes. Then spasmolytic 5,0 is entered to the patient, furosemide or lasix 40 mg on a physical solution. After acceptance of medical products the patient is recommended to jump and run within 30-40 minutes. After 3-4 procedures stones often left independently.

The results of lithotripsy therapy showed that in 19 (48,7%) patients stones have decreased in size and in 16 (41,0%) patients their total solution was observed, meaning that almost 89,7% of patients received positive result. At that in 4 (10,3%) patients dilution of the stones was accompanied by abundant excretion of gravel and small concretions.

In conduction of the conservative treatment among the most frequent complications relapse of gravel pyelonephritis should be noted in 72 (73,4%) cases which is obviously related to ascending infection and esophagus reflux. In 12 (12,2%) of cases in men there was a relapse of chronic prostatitis.

Thus, lithotripsy therapy in combination with suggested methodic, is quite effective method of conservative treatment of urolithiasis in cases when stones are located in the middle and lower one third of ureters even after its unsuccessful conduction in regional centers of conservative methods of treatment. Clear determination of indications and contra-indications, prevention o possible complications allowed obtaining good results in 69 patients with

minimum period of stay in clinic (4-6 days in average). Lithotripsy therapy of urea and mixed kidney stones allowed to achieve positive results in 59% of cases, including 41,0% of full dilution o single and multiple stones. Besides the decrease in the size of stone, patients mark improved state of health, urination, normalized analysis of urine and blood.

## **CONDUCTION OF METHAPROPHYLAXIS OF PATIENTS WITH UROLITHIASIS IN POSTOPERATIVE PERIOD**

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Insufficient and inadequate treatment of patients in postoperative period leads frequently to progressing of the chronic pyelonephritis and rapid relapses of urolithiasis. Therefore it is necessary to conduct on a compulsory basis postoperative metaprophyllaxis of the relapse of urolithiasis. Conduction of methaprophyllaxis requires strict dispensary observation, maintenance of the diet and taking of corresponding medicines.

## **Is there a relation between testosterone and lipids in young men survived from myocardial infarction?**

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**Aim.** To study the relation between male reproductive hormones and lipids.

**Methods and results.** 29 men with myocardial infarction were included into the study, in the age of 30-50 years old (average age  $43,4 \pm 4,4$  ), hospitalized to SRI of Cardiology. The patients were divided to groups by testosterone indicators, as well as by estradiol. By the results of our research testosterone is positively associated with ELDL cholesterol ( $r=0,368$ ,  $p<0,05$ ) and TG

( $r=0,371$ ,  $p<0,05$ ). There was no correlation found between testosterone and other atherogenic ( $r(T-OX)=0,056$ ,  $r(T-LDL)=-0,043$ ,  $p>0,05$ ). As for antiatherogenic lipids - HDL, very weak negative association was determined between it and testosterone ( $r=-0,164$ ,  $p>0,05$ ). Between testosterone and atherogenic index there was found very weak positive correlation ( $r=0,204$ ,  $p>0,05$ ).

In our study we revealed weak, but insignificant correlations between estradiol and lipids. Estradiol is positively associated with HDL cholesterol ( $r=0,151$ ) and TG ( $r=0,168$ ), negatively associated with LDL ( $r=-0,137$ ) and atherogenic index ( $r=-0,225$ ).

**Conclusions.** Testosterone increases the level of atherogenic lipoproteins. There is no significant association between estradiol and lipoproteins.

Reduction of the level of testosterone and increase of the level of estradiol, as it was determined by us, contributes to the development of infarction. But this effect is not related to the influence of hormones on lipids metabolism.

**Key words:** testosterone, estradiol, lipids, ischemic heart diseases, young men.

## CASE OF DIAGNOSTICS OF FLAKING ANEURYSM

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Flaking aneurysm occurs in 1 out of 10 000 hospitalized patients (by V.I. Burakovsly and L.A. Bokeria). However, significant part of such patients dies on pre-hospital stage. According to M.Wheat (1973) frequency of aorta exfoliation is 5-10 cases per 1 mln. population annually. Flaking aneurysm of aorta causes sudden death in 1,1 % of cases.

The main cause of exfoliation of aorta vascular wall is arterial hypertension in the presence of degenerative alterations of its media membrane, muscular and elastic structures. The last one can be caused by various etiological factors – atherosclerosis, fibro dysplasia, idiopathic media-

necrosis, genetic defect of elastic structures (Disease of Morphan), hormonal changes in them, which is typical for the last term of pregnancy.

Under the various processes in aorta etiological factors of hypertension and degenerative changes of medium membrane have different meaning. Exfoliation of aorta during pregnancy, Kushing disease is caused mainly by increase of arterial pressure. Exfoliation of aorta in coarctation, as well as during atherosclerosis, is caused usually by both high arterial pressure and degenerative changes in aorta wall. In patients younger than 40 years old, aorta exfoliation is related mostly to congenital and genetic changes in aorta wall, rather than to hemodynamic changes.

There are three main factors identified:

- Exfoliation of aorta wall;
- development of large intramural hematoma;
- Compression or break of aorta branches, providing blood to vitally important organs, with their subsequent ischemia.

Hematoma development in the area of ascending part of aorta and quite often of its root leads to compression of coronary arteries, which determine pain syndrome with development of acute heart failure. Symptoms of aorta exfoliation are different and can imitate practically all cardio-vascular diseases, and also neurological, urologic diseases. The process of exfoliation can have three forms of proceeding – acute, sub acute, and chronic.

In this article the author describes a case of diagnosing flaking aneurysm in a patient T., 35 years old. This observation is of practical interest, since the disease is very rare and in time diagnostics can lead to determination of treatment tactic, which is vital for disease outcome and can save patient's life.