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## **RISK FACTORS OF DEVELOPING OF MALIGNANCIES OF A PROSTATE GLAND AND PROBLEM OF THEIR TIMELY DIAGNOSTICS**

**I. Didyk**

Municipal higher educational institution "Zhitomir Institute of nurses" (Zhitomir, Ukraine)

**Summary.** The scientific analysis of the researches described in domestic and foreign literature concerning studying of risk factors of development of malignant new growths of a prostate gland which knowledge is necessary for their timely early diagnostics is carried out to publications.

**Key words:** prostate gland cancer cases, risk factors of development of oncological pathology of a prostate gland.

**Резюме.** У публікації проведено науковий аналіз описаних у вітчизняній та зарубіжній літературі досліджень, що стосуються вивчення факторів ризику розвитку злоякісних новоутворень передміхурової залози, знання яких необхідно для своєчасної ранньої їх діагностики.

**Ключові слова:** захворюваність на рак передміхурової залози, фактори ризику розвитку онкологічної патології передміхурової залози.

**Резюме.** В публикации проведен научный анализ описанных в отечественной и зарубежной литературе исследований, касающихся изучения факторов риска развития злокачественных новообразований предстательной железы, знание которых необходимо для своевременной ранней их диагностики.

**Ключевые слова:** заболеваемость раком предстательной железы, факторы риска развития онкологической патологии предстательной железы.

At men are determined by the main reasons for death by localization of new growths: malignant new growths of lungs, a stomach, rectum, prostate gland, an colonic gut which in the sum make 56.0%.

Relevance of research of risk factors of developing of a prostate cancer is emphasized with high rates of prevalence of a cancer of this localization among men, the difficulties connected with diagnosis of this pathology at early stages and high percent of cases of establishment of the diagnosis in late stages of a disease when inefficient is even a palliative therapy.

In this regard search of criteria and methods of selection of persons with high risk of development of a disease for further in-depth tool and laboratory study, first of all among the man's population of the country for which characteristic there is a high mortality at working-age continues to be actual.

**Research objective.** Carrying out the analysis according to domestic and foreign literature of results of modern researches of a problem of increase of cancer cases of a prostate gland, risk factors of development of this pathology for its timely early diagnostics became a research objective.

**Materials and methods.** By means of bibliosemantic, statistical, analytic-synthetic methods and the content analysis the tendencies of incidence and prevalence of oncological pathology of a prostate gland described in scientific publications at men, risk factors of developing of a disease, approaches to early diagnostics were studied.

**Results of research and their discussion.** Malignant new growths of a prostate gland in economically developed countries are on one of the first places in the general structure of oncological incidence of the man's population.

Trends to rejuvenation of the contingent of patients on a prostate cancer though this nosology continues to remain oncological pathology of men of advanced and senile age is monitored [3, 4, 11]. According to foreign scientific researches among all men with a prostate cancer only 0,1% make faces aged till 50 years, with the minimum (1:10000) risk of developing of this disease aged to 40 years [6, 14].

In 2012 the diagnosis of a prostate cancer was established 1.1 million men around the world [13]. Prevalence of this pathology is defined by the highest in Australia, New Zealand and North America.

The prostate cancer wins first place among all new growths at men in the USA. In the countries of the European region more than 85 thousand new cases that makes about 11.0-12.0% of all malignant new growths from which men suffer annually are registered [2, 10].

By results of the scientific researchers conducted among men of America at every 6th (16,2%) from living in this country of men the diagnosis of a prostate cancer will be established, and every 33rd (3,0%) will die of it [7-9, 15].

Timely diagnostics and in due time begun treatment promote increase of terms of 5 summer survivals of such patients. So, among men of America with the established diagnosis of a prostate cancer the specific weight of persons with 5 summer survival makes 50-60% [6].

According to 2012 in structure of malignant new growths of men the prostate cancer is in Ukraine on the second place (9.5%) after a skin cancer, and among the oncological and urological of diseases – on the 1st place. Prevalence of a prostate cancer increases in Ukraine (in 2001 prevalence made 74.5, and in 2011 – 166,2 on 100 thousand population). In 2012 on the account with the diagnosis a prostate cancer 34 867 men consisted [1, 3].

At the present stage questions of studying of an etiology of a prostate cancer remain one of the most actual.

Many previous researches proved existence of communication between developing of a prostate cancer and violation of endocrine regulation of balance of sexual hormones at the level of gipotalamo-hypophysial system, adrenal glands and sexual glands (testosterone).

In different researches were carried to risk factors of development of a prostate cancer: age, racial and ethnic characteristic, heredity, features of food (especially abuse of fats), excess weight, existence of addictions, low physical activity, ecological factors, intensity of ultra-violet radiation, existence in the anamnesis of a vasectomy, violation of endocrine regulation of balance of sexual hormones, good-quality hyperplasia of a prostate gland.

The age as risk factor of development of a prostate cancer was studied in many researches by results of which it is proved that with age the probability of its development increases, very seldom the disease can arise at men more young than 40 years. Average age of patients with cancer of a prostate gland fluctuated according to different researches from 62 to 70 years [2].

The analysis of frequency of cancer cases of a prostate gland in particular among Japanese and black emigrants in the USA proved essential influence of a racial and ethnic factor on developing of a disease. It is considered that the prostate cancer approximately for 60% meets at persons of negroid race more often, also at the black population risk to die of this disease much above in comparison with Asians and Latin Americans though the last demands further studying as in these countries diagnostics and verification of the diagnosis of a prostate cancer is differently adjusted.

Influence and socio-economic factors is proved, namely existence of direct correlation link between a stage of a prostate cancer and writing is proved. So, at the Afro-Americans who have less than 12 years of education relative risk of death from a prostate cancer 1.51 times higher in comparison with the Afro-Americans who have the higher education [9].

The hereditary anamnesis of existence of a prostate cancer authentically increases risk of developing of a disease and death for its reason. Correlation gene (a hereditary gene of a prostate cancer 1 (HPCG)) changes and mutations in BRCA1 or BRCA2 genes is proved. The risk is significantly higher for men whom a prostate cancer some relatives had, and especially when the diagnosis to them was established at young age.

Possibility of determination of genetic tendency to development of a prostate cancer practices Genomewide association which diagnoses five options of chromosomal loci which are associated with a prostate cancer.

At establishment of influence of a hereditary factor on developing of a disease of the accompanying there can be different factors, first of all influences of factors of environment, and other factors, including factors of matrimonial life, a different type of its frustration. So, it is proved that the increased sexual activity lowers risk of development of a prostate cancer, and a vasectomy,

a good-quality hyperplasia of a prostate, urogenital infections on the contrary promote its development [2].

It is investigated that the risk to die of a prostate cancer at men with an excess weight, obesity is twice higher, than at men with a normal weight that once again proves existence of influence of a way of life, habits and a diet on emergence and development of a prostate cancer and indirectly proves expediency of influence through their correction on the forecast of a disease [8].

The risk of a disease increases at the excessive use of animal fats at the use in food of excessive amount of fat meat, fish, fried smoked fat products, chips, hamburgers and other fast food.

Matters also the way of life of the man, his physical activity as an inactive way of life, especially long work sitting promote development of a tumour because of stagnation of blood in bodies of a small pelvis.

Lack of symptoms is feature of a disease on a prostate cancer, thus, that from the moment of formation of a tumour before emergence of its metastasises can pass even ten and more years, it is possible for this reason 50.0% of patients during establishment of the diagnosis of a prostate cancer already have metastasises.

For the prevention of increase of quantity of deaths because of a prostate cancer testing of a prostate (definition of an anti-gene of PSA) with the subsequent biopsy widely practices in the developed countries of the world [12].

PSA –which is produced by epithelial cells of a prostate gland, its concentration in blood in norm makes 1-3 ngr/ml. Depending on age of the man various fluctuations of its values, namely 40-49 years – 0-2,5 ngr/ml are allowed; 50-59 years – 0-3,5 ngr/ml; 60-69 years – 0-4,5 ngr/ml; 70-79 years – 0-6,5 ngr/ml. The DOG test (in normal not Vichy 4.0 ngr/ml) has high sensitivity and specificity, high predictive value [5].

The association of urologists of the USA recommends carrying out the DOG dough annually to all healthy men is more senior than 50 years. In addition apply manual research of body through a rectum at which it is possible to define existence of knots and consolidations in iron to identification of new growths of a prostate gland. At annual use of the listed methods, or at least one of them it is possible to reveal a prostate cancer at an early stage [12].

Are determined by additional informative methods of research: ultrasonic investigation of a prostate gland through a rectum with opportunity to carry out its biopsy. These methods are applied at the secondary level of delivery of health care. More exact diagnosis of a prostate cancer is provided with complex inspection of patients with definition of specific immunological and immunohistochemical markers in blood and tissue of a prostate when carrying out transrectal biopsies.

#### *Conclusions:*

Results of modern scientific researches testify to gradual increase of indicators of incidence on malignant new growths of a prostate gland not only in Ukraine, but also in other countries of the world. Timely early diagnosis of a prostate cancer demands from the medical personnel of primary level of knowledge of the leading risk factors of developing of this pathology and its further progressing (emergence of metastasizes). Selection of patients taking into account existence of risk factors of development of this pathology at them for further inspection and treatment in specialized medical institutions of secondary and tertiary (specialized) level of delivery of health care remains in the most perspective way for preservation of working capacity, life and health of the man's population of the country.

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*Повний список літератури знаходиться в редакції.*