

to the group of eco-associated diseases, which are indicators of the state of the environment. Congenital defects occur in 5% of newborns, but their contribution to the structure of child mortality reaches 20%. Many countries around the world have established specialized registers to study the frequency and dynamics of congenital malformations.

The Belarusian register of HPV is a monitoring system for monitoring the population frequency and dynamics of birth defects. The uniqueness of the Belarusian register is due to the wide coverage of the analyzed areas and the number of analyzed births. Processing of information on cases of birth defects in the Republic of Belarus is carried out on a regional basis in accordance with the order of the Ministry of health of the Republic of Belarus, "Order of improvement of records of congenital defects (malformations) in children (fetus)" (No.1172 from 01.11.2010), according to which all cases of birth defects registered in children under the age of one year, stillbirths, children who died before the age of one year, and in aborted fetuses for genetic indications are subject to registration.

In the structure of congenital malformations anomalies of the digestive system occupy the third place and account for 21.7–25.0% of all defects. In Europe, congenital malformations of the digestive system occur at a frequency of 4.2–6.4 per 10,000 live births. In the Republic of Belarus, the frequency of occurrence is 1.5 per 10,000 live births.

The aim of this study was to assess the population frequencies of the digestive system in the period 2015–2016 in the Republic of Belarus on the basis of the data of the Belarusian register.

The studies were conducted on the basis of public institution "RNPC "Mother and child". 1024 analysed cases, the CDF of the digestive system in children during the period 2015–2016, the study found that isolated forms of vices was 24 (41,3%) cases, systemic diseases – 10 (17,2%) cases. Malformations of the digestive system composed of multiple congenital malformations (MITR) – 27 (46,5%) of the cases.

In most cases (56%), the diagnosis of the digestive system CVD can be established prenatally on the basis of ultrasound examination followed by the use of invasive diagnostic methods. Each year, this figure averaged 58.25 cases, the population frequency of which averaged 4.06 ‰.

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DETERMINATION OF POLYMORPHISM OF K-RAS AND DPC4 GENES IN PANCREATIC CANCER IN THE BACKGROUND OF DIABETES MELLITUS

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Molecular genetic studies found that 86% of patients with pancreatic cancer and diabetes mellitus had a mutant K-ras gene in the first and second bases of the 12 exon 1 codon and no polymorphisms in the 11 exon of the DPC4 gene (Smad4).

Keywords: pancreatic cancer, diabetes mellitus, proto-oncogene K-ras, Smad4 gene (DPC4).

The deteriorating ecological situation leads to a steady increase in the diseases of the endocrine system and malignant neoplasms.

The risk of malignant diseases in patients with diabetes is 2 times higher with a disease duration of less than 5 years. At present, according to individual researchers, there is an increased risk of developing pancreatic cancer from 5 to 40% with long-standing diabetes mellitus [1, 2].

The genes of the ras family most often expressed in tumor cells are the ras [3]. Mutations in the gene K-ras lead to its activation. Patients with a K-ras mutation have a low overall survival rate and an unfavorable prognosis compared to patients with wild-type K-ras. The detection of K-ras mutation is one of the earliest methods of diagnosing pancreatic cancer [4].

The Smad4 gene protein (DPC4) is a critical component of the signal pathway from the transforming growth factor and a factor associated with high proliferative tumor activity and resistance to therapy. According to separate data, the Smad4 gene in the pancreatic cancer is inactivated in 55% [5].

Material and methods. The material for the study was clinical data and tumor tissue of 14 patients suffering from pancreatic cancer, in combination with diagnosed diabetes mellitus, who were on treatment at the Republican Scientific and Practical Center of Oncology and Medical Radiology. N.N. Alexandrov.

DNA isolation from tumor tissue was performed using the QIAamp DNA FFPE Tissue kit (Qiagen, Germany).

By the method of selective polymerase chain reaction (PCR) with BstNI endonuclease restriction ("Fermetas", Lithuania) can be detected point mutations at the first and second bases of the 12th codon of the first exon of the K-ras (QIAamp DNA FFPE Tissue), Germany).

Mutations in the 11 exon of the DPC4 / Smad4 gene, were detected, by polymerase chain reaction followed by sequencing. Detection of the results was carried out on the genetic analyzer ABI 3130 (USA).

Results of the research.

In a molecular genetic study in patients with pancreatic cancer, a history of diabetes mellitus revealed that in 12/14 (86%) cases, a mutant K-ras gene was found in the first and second bases of the 12 exon 1 codon.

In the analyzed group of patients, no genetic polymorphisms in the 11 exon of the DPC4 gene were detected.

Thus, the preliminary data on the detection of mutations in 86% of patients with pancreatic cancer on the background of diabetes mellitus suggests a high aggressive potential of the tumor, resistance to specialized medical treatment and a high risk of unfavorable prognosis.

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HUMAN MICROBIAL ECOLOGY AND STRESS

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There is a functional connection between the gastrointestinal tract (GIT) and the central nervous system (CNS) of the host's organism. Recently, more and more experimental evidence has emerged that the other key player in this interaction is the intestinal microbiota [1].

Keywords: microbiota, central nervous system, stress, probiotic.

Physical and psychological stress affects not only the immune system, but also hormonal and digestive homeostasis. Immune and neuroendocrine systems provide integrated responses to environmental signals, and the relationship between stress and immune function in many contexts, including a proliferative response to mitogens and cellular activity, has been demonstrated. Stress can lead to an imbalance between pro- and anti-inflammatory cytokines or uncontrolled production of cytokines. Dysregulation of congenital and adaptive intestinal immune responses directed against bacterial flora, including the destruction of oral tolerance to environmental antigens