THE ROLE OF FOLATE METABOLISM IN THE DEVELOPMENT OF CERVICAL DISEASES

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Annotation. Cervical cancer is one of the few cancers that can be prevented. When it is diagnosed at an early stage, the disease is more amenable to effective treatment, which increases overall and relapse-free survival, improves the quality of life of patients, and reduces the cost of treatment. According to international guidelines, Human Papillomavirus (HPV) DNA tests represent a valid alternative to Pap Test for primary cervical cancer screening, provided that they guarantee balanced clinical sensitivity and specifcity for cervical intraepithelial neoplasia grade 2 or more (CIN2+) lesions. The study aimed to assess whether HPV Selfy (Ulisse BioMed – Trieste, Italy), a full-genotyping HPV DNA test that detects and diferentiates 14 high-risk HPV (HR-HPV) types, meets the criteria for primary cervical cancer screening described in the international guidelines, on clinician-collected as well as on self-collected samples.

Keywords: diseases of the cervix, oncogenic types of HPV, folate metabolism

Introduction. Pathology of the cervix (CC) is one of the most common gynecological diseases, especially in antenatal clinics - 25-45%. In gynecology and obstetrics, early diagnosis and adequate treatment of background and precancerous diseases, as well as initial forms of cervical cancer, remain one of the most important problems [1]. Cervical cancer (CC) is a major public health problem in Uzbekistan. According to the International Agency for Research on Cancer IARC (IARC) estimates for 2018, cervical cancer is the second most common type of cancer among women in Uzbekistan after breast cancer and the third most common cause of death of women from cancer in Uzbekistan. According to estimates for 2021, the age-standardized incidence and mortality rates are 5.3 and 2.9 per 100,000 women per year, respectively. According to the national cancer registry, in 2021 in Uzbekistan, the number of initially diagnosed cases of cervical cancer in the republic was 1827, 997 cases of death from cervical cancer were registered with the following distribution of cases by stages: stage-I: 12%, stage-II: 54, 1%,

stage-III: 23.6%, stage-IV: 5.3%. Every year in Europe, more than 25,000 cases of cervical cancer are diagnosed and about 12,000 deaths from this disease, which exceeds the number of deaths from AIDS and hepatitis combined [2,3]. The etiological link between persistent HR-HPV infection and the development of high-grade cervical dysplasia and cervical cancer is well established. The two oncogenic HPV types that most commonly cause cervical cancer are types 16 and 18. Together they cause approximately 70% of cervical cancers. of the uterus in all countries of the world, unfortunately, the incidence of cervical cancer prevails in developing countries. CC is one of the few cancers that can be prevented [2,4]. Early diagnosis of precancer provides for the possibility of primary and secondary prevention. Primary prevention is a system of measures to identify risk factors for the development of cervical cancer and eliminate them. This is primarily the promotion of a healthy lifestyle, increasing the education of the population, the fight against smoking, the use of barrier methods of contraception, the prevention and identification of risk factors for the spread of human papillomavirus infection (PVI) and other sexually transmitted infections (STIs), the development and implementation of preventive vaccines. Secondary prevention is cervical screening, that is, examination of all women in order to detect changes in the cervical epithelium and timely treatment of precancer and cervical cancer [5]. Cervical cancer of the brand is one of the few forms of malignant neoplasms that satisfy all the requirements of population screening, i.e. is an almost completely preventable disease [4,5]. The Regional Consultative and Diagnostic Center has accumulated 10 years of successfull experience in identifying, treating and monitoring patients with cervical pathology, i.e. with background and precancerous processes. Algorithms for diagnosing monitoring of patients have been developed. Improvement of screening programs and methods of early diagnosis of precancerous diseases of the cervix contributes to the prevention of invasive cervical cancer. Various methods are used in the diagnosis of precancerous diseases and cervical cancer (CC), but the most accessible for practice are the clinical-visual method, the use of colposcopy, molecular biological methods for detecting NVI (polymerase chain reaction - PCR), cytological examination of smears and histological examination targeted biopsy of the cervix. Summarizing the information presented, it should be noted that diagnostics aimed at predicting the pathology of the cervix should be based on the cytological method, supported by PCR diagnostics of the human papillomavirus and the introduction of molecular biomarkers [5]. Methods for early diagnosis and the introduction of new screening technologies for diseases of the cervix open up additional opportunities for the prevention of cervical cancer, which is the basis for

reducing diseases in general and opens up prospects for maintaining women's health.

Background: To investigate the effect of folate status on cervical intraepithelial neoplasia (CIN) progression and its relationship with high-risk human papillomavirus (hrHPV).

Subjects and methods: We evaluated 20 000 sexually active women aged <65 years in Andijan region by using a questionnaire; the subjects were also screened using the CIN-DIAG cytologic test . Patients with abnormal CIN-DIAG results (other than glandular cell abnormalities) who were willing to provide informed consent were further diagnosed using colposcopy and histopathological examination. We investigated 247 cases of low-grade cervical squamous intraepithelial lesions (LSIL), 125 cases of high-grade cervical squamous intraepithelial lesions (HSIL) and 877 controls. A 24-item food frequency questionnaire was filled out by the investigator to estimate the consumption of dietary folate. Positivity for hrHPV from residual exfoliated cervical cells was tested; serum folate was also measured.

Results: The hrHPV infection rate in HSIL patients (77.6%) was higher than that in LSIL (33.2%) and control (32.0%) patients. Dietary folate intakes in controls, LSIL and HSIL were 306.9±176.6, 321.8±168.0 and 314.7±193.8 μg/kcal, respectively. The levels of serum folate in controls, LSIL and HSIL were 18.2±7.9, 15.9±7.1 and 14.3±7.5 nmol/l, respectively. Increased CIN correlated with higher rates of hrHPV infection and lower levels of serum folate.

Conclusions: Low levels of serum folate may increase the risk of CIN progression.

Literature
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