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ВИРУС ПАПИЛЛОМЫ ЧЕЛОВЕКА ПРИ ВИЧ-ИНФИЦИРОВАННЫХ ЖЕНЩИН

Резюме. *В странах Восточной Европы и Центральной Азии наблюдается рост доли женщин репродуктивного возраста среди пациентов с ВИЧ- инфекцией. Гинекологическое здоровье ВИЧ-инфицированной женщины и сохранение возможности рождения у нее здорового ребенка является приоритетным направлением в мероприятиях ВОЗ. ВИЧ-инфицированные женщины имеют более высокий риск папилломавирусой инфекции, чем ВИЧ-негативные женщины, а также более высокий риск персистенции и малигнизации. В своей работе мы попытались проанализировать влияние возраста на частоту выявления вируса папилломы человека у ВИЧ-инфицированных женщин. При выполнении исследования нами было выявлено, что вирус папилломы человека высокого канцерогенного риска у ВИЧ-инфицированных женщин встречается в широком возрастном диапазоне. Полученные данные необходимо учитывать при проведении цервикального скрининга у данной категории пациенток, например, проводить ВПЧ-тест при постановке на учет в центр СПИД всем ВИЧ-инфицированным женщинам вне зависимости от возраста.*

Ключевые слова: *ВИЧ-инфекция, женщины, возраст, ВПЧ.*

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HUMAN PAPILLOMA VIRUS IN HIV-INFECTED WOMEN

Abstract: *In Eastern Europe and Central Asia, there is an increase in the proportion of women of reproductive age among patients with HIV infection. The gynecological health of an HIV-infected woman and the preservation of her ability to give birth to a healthy child is a priority in WHO activities. HIV-infected women have a higher risk of human papillomavirus infection than HIV-negative women, as well as a higher risk of persistence and malignancy. In our work, we tried to*

analyze the effect of age on the frequency of detection of human papillomavirus in HIV-infected women. During the study, we found that the human papilloma virus high carcinogenic risk in HIV-infected women occurs in a wide age range. The obtained data should be taken into account when conducting cervical screening in this category of patients, for example, to conduct an HPV test when registering with an AIDS center for all HIV-infected women, regardless of age.

Key words: *HIV infection, women, age, HPV.*

The HIV epidemic in Eastern Europe and Central Asia continues to grow rapidly. Over the past decade, the epidemic has been characterized by an increase in the number of cases of transmission of the virus during heterosexual physical contacts, which leads to an increase in the proportion of women among patients with HIV infection. This is a serious problem not only for medicine, but is of great socio-economic importance.

The expansion of the spectrum of antiretroviral drugs and the use of combined pharmacotherapy has led to a significant increase in the duration and quality of life of HIV-infected patients. Against the background of a significant decrease in the frequency of a number of opportunistic infections, the role of cervical cancer (CC) has increased, which can affect the long-term course of HIV infection in women.

HIV-infected women have a higher risk of papillomavirus infection than HIV-negative women, as well as a higher risk of persistence and malignancy [1, 2, 4, 5, 8, 9, 10].

Thus, the data available in the literature indicate the mutual influence of HIV infection and HPV, worsening the prognosis and development of the disease.

To study the prevalence of human papillomavirus of high carcinogenic risk (HPV HCV) and depending on the age of HIV-infected women in the countries of Eastern Europe and Central Asia.

The collection of biomaterial from 647 HIV-infected women was carried out from September to December 2017 as part of the project “Studying the impact of HPV and STIs on the reproductive health of HIV-infected women in recipient countries in order to improve prevention measures” (Decree of the Government of the Russian Federation dated 14 November 2015 No. 2314-r). All women underwent an HPV test to identify 14 types of HPV HRC (16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68). The analysis of laboratory parameters was carried out at the Central Research Institute of Epidemiology of Rospotrebnadzor using test systems: AmpliSens® HPV HRC screen-titer-FL, AmpliSens® HPV 16/18 -FL, AmpliSens® HPV HRC genotype-FL, kit DNA-sorb-D for DNA extraction.

In preparing the work, indicators of descriptive statistics (mean, median, standard deviation, minimum, maximum) were used. To compare the quantitative indicator, Student's t-test was used.

Among the 647 examined patients, young patients under 40 years of age predominated, which emphasizes the significance of the socio-economic damage caused by this disease.

HCV HPV in the analysis of 647 samples was detected in 265 HIV-positive infected women (41%). Similar results on HPV prevalence among HIV-infected women were obtained by Eun Kyoung Park et al. HIV-positive women are more likely to be infected with highly oncogenic HPV types than HIV-negative women (30% vs 4.9%, $P<0.001$) based on the analysis of biosamples from 60 HIV-positive women and 1938 HIV-negative ones [6]. In another study of 178 HIV-infected women, 32% were diagnosed with high oncogenic risk papillomavirus.

Figure 1 shows the age distribution of all HIV-infected women who participated in the study and the age distribution of HIV-infected women diagnosed with HCV HPV. Differences between groups are not statistically significant (Student's t-test = 1.972, $f=910$, $\alpha=0.05$). The data obtained confirm that screening for cervical cancer in HIV-infected women should be continued throughout the woman's life [7].

It is noteworthy that 49.4% of 265 HIV-infected women had several HRC HPV genotypes at once (from two to seven genotypes). The distribution by the number of HPV genotypes encountered across the republics is shown in Figure 2. In the Republics of Uzbekistan, Kyrgyzstan, Tajikistan and the Russian Federation (Samara), a combination of several HPV genotypes was registered in more than 50% of cases. According to foreign literature, mixed HPV infection is less common in HIV-infected women. So Broccolo F. et al., having analyzed 597 biosamples from the cervical canal of the cervix, registered a mixed HPV infection in 22% of pathological samples [3]. Mixed infection with highly oncogenic HPV types according to Eun Kyoung Park et al. detected in 10% of HIV-infected women and 0.6% of HIV-negative women ($P<0.001$) [6]. At the moment, it is not possible to explain such a high percentage of mixed HPV infection in HIV-infected women within the framework of the project. But thanks to the study, we explained the need for using an HPV test in this region to determine as many HPV genotypes as possible.

HIV-infected women in this region have a high incidence of HPV infection. We did not find any differences in the frequency of HPV detection and the age of the surveyed HIV-infected women. Given the data obtained, it is necessary to pay special attention to the group of HIV-infected women, for example, to conduct an HPV test when registering with an AIDS center for all HIV-infected women,

regardless of age. When performing cervical screening, be sure to use test systems that allow determining at least 14 HRC HPV genotypes.

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