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OVERVIEW: EPIDEMIOLOGICAL CHARACTERISTICS OF HPV IN UZBEKISTAN

Abstract: The purpose of this study was to study the prevalence of various phylogenetic groups of human papillomavirus infection, to compare data with studies conducted by various groups of scientists in the world. To determine the resource due to which it is necessary to influence at the population level for carrying out preventive measures aimed at the prevention of cervical cancer caused by human papillomavirus infection.

Key words: cervical cancer, genotype, papillomavirus infection, prevalence, phylogenetic group.

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Introduction

The Catalan Institute of Oncology (ICO) and the International Agency for Research on Cancer (IARC) have joined forces to expand the HPV Information Center as part of the WHO International Agency for Research on Cancer. According to the latest report from the HPV Information Center, there are 2.784 million women aged 15 and over at risk for developing cervical cancer in the world. According to calculations, 569847 women annually register cervical cancer and 311365 women die from it [2].

To study the epidemiological characteristics of HPV in Uzbekistan, to compare with the data of published studies to determine a strategy for combating cervical cancer.

Materials and methods

Materials: Women aged 18-65 years. 6431 women to determine the phylogenetic group of HPV. The study included the results of testing women aged 18 to 65 years. Analysis of cervical canal samples performed by PCR diagnostic.

In order to study the prevalence of human papillomavirus infection in patients who applied to the Research Institute of AiH for medical or diagnostic purposes, 6431 patients examined. The results obtained indicate a wide spread of human

papillomavirus infection in patients of Republican institutions - 1162 (18.1%). At the same time, 1409 (21.9%) of the examined patients constituted the age group up to 25 years, the most active age in relation to reproductive function. This indicates the need to use HPV screening criteria for high oncogenic risk in order to prevent cancer of the reproductive system. According to the same report of the HPV Information Center [2], the prevalence of HPV among women with normal cytology varies significantly: from more than 24.6% for Eastern Europe to less than 8.9% for Asia. However, we must take into account the fact that mass screening studies, in which a systematic examination of women is carried out for a long time with coverage of the general population, has not been conducted. The calculations are based on a meta-analysis of all available literary articles. Therefore, a very large number of studies have been conducted in China, the USA, Japan and the African region. Prevalence data are based on testing of 453,184 women with normal cytology, 38,191 with minimal changes in cytology (LSIL / CIN1), 50,202 women with precancerous lesions (HSIL / CIN2 / 3 / CIS), and 58,796 women with cancer. The average prevalence of HPV in women with normal cytology was 3.9%, with minimal changes of 25.8%, with a precancerous condition of 51.9%, and with cancerous lesions 69.4%. For the

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European region, these figures are 3.8 (3.7-3.9), 27.1 (26.5-27.7), 54.5 (53.8-55.2), and 74.0 (73.4-74.6), respectively, and for the Asian region 3.4 (3.3-3.5), 21.2 (20.3-22.1), 42.1 (41.3-42.9) and 68.9 (68.3-69.5), respectively. Considering that the results of HPV testing were carried out based on opportunistic screening (examination of women on the recommendation of a doctor when they found minimal changes in the epithelium or if there is suspicion), we found that the epidemiology of HPV in Uzbekistan corresponds to the intermediate position between the European Region and Asia.

Upon request in the international medical research database PubMed (the largest database of over 30 million medical articles, books and publications), the prevalence of HPV in Uzbekistan is mentioned in two articles by Rogovskaya S.I. et al., 2013 [3] and Bray F et al., 2013 [4]. In an article by Bray et al., 2013, HPV mentioned only in the context of HPV-associated diseases in Uzbekistan, and Rogovskaya S.I. et al., 2013 refers to the results presented in an article by Inamova S.T. et al., 2009, published in the Russian journal *Dermatology and Reproductive Health News*, No. 4 [1]. The same source used in the World HPV Report [2]. According to Inamova S.T. et al., in 2295 women aged 18–40 years, the prevalence of HPV was 37.9% (35.9–39.9).

Age and social characteristics were studied in 1409 patients with diagnosed human papillomavirus infection who had significant age differences ($p < 0.001$). With age, the detection frequency decreased, but this fact is more associated with the activation of the immune system and the body cleansing of the virus, as well as the transition to latent persistence at the epithelium level. This fact has been described in international literature, indicating that the detection of HPV is significantly reduced by 50 years [5, 6]. In our research, we continued to detect the virus until the age of 70; this is more due not to a change in the biology of the virus, but to an improvement in the quality of diagnosis [7, 8]. The highest prevalence (occurrence) of the HPV virus was found in the age group of 30-34 years - 31.5%. This contrasts with published data around the world, which indicates that all the same, the majority of cases of HPV detection occur in the age of 25 years [9, 10, 13, 16]. This shows the country feature of the manifestation of the epidemiology of HPV in Uzbekistan. The socio-moral foundations and customs of the population of our region can explain this fact.

Epidemiological studies involve large-scale studies involving a large number of observations (subjects) to ensure representativeness of the sample, which implies large material costs. In view of this, all available data used for epidemiological studies, which analyzed to obtain the results. With regard to HPV, the

situation is complicated, mass campaigns are not carried out; the examination is carried out only in the direction of a doctor. PCR studies remain very expensive; therefore, often the diagnosis of HPV is limited to the determination of phylogenetic groups. Each group has a main representative. Therefore, in phylogenetic group A9, the main one is genotype 16, in-group A7 - 18 genotype, group 3 represented by genotypes 51/56. Due to the limited data, in our work we limited ourselves to determining the phylogenetic group.

So, the most often noted phylogenetic group A5 / A6 - 54.2%. This group represented by genotypes 51 and 56. This goes against internationally published data, where genotypes 16 (phylogenetic group A9) and 18 (phylogenetic group A7) prevail [16. A7 (i.e., genotype 18 group) was found in 43.6%, followed by group A9 (16 genotype) - 28.4%. However, no other differences between phylogenetic groups were noted. For example, the average age indicator for the phylogenetic group A9 was 31.4 ± 0.4 years, for the phylogenetic group A7 the average age was 32.3 ± 0.3 years, for the A5 / A6 group this indicator was $32.1 \pm 0.3\%$. Moreover, the indicators did not have a statistically significant difference between the groups. Only in relation to virus concentration, the phylogenetic group A9 was higher statistically significant.

Numerous studies show that the presence of sexually transmitted diseases is a contributing factor in the infection of other sexually transmitted infections [11, 13, 14]. In this regard, we examined the possible relationship between the levels of spread of various sexually transmitted infections and the prevalence of HPV infection. One of the factors of transmission of urogenital infection is the presence of sexually transmitted diseases. We studied the incidence of concomitant urogenital infection in women with positive HPV status. Infections were determined: ureaplasmosis, mycoplasmosis, chlamydia and gardnerellosis. The most common concomitant infections with HPV were ureaplasmosis in $85.9 \pm 1.7\%$ of cases (out of 427 in 367 positive), mycoplasmosis in $14.1 \pm 1.7\%$ (out of 425 in 60 positive); gardnerellosis in $14.9 \pm 1.7\%$ (from 423 to 63 positive); chlamydia in $6.8 \pm 1.2\%$ of cases (from 423 to 63 positive).

Conclusion

Thus, I would like to note that in Uzbekistan, as well as in many countries of the world, along with the introduction of vaccination against human papillomavirus infection, it is necessary to introduce a screening system to detect early inflammatory processes and precancerous conditions in order to prevent cervical cancer.

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