

EPIDEMIOLOGICAL CHARACTERISTICS OF CERVICAL INTRAEPITHELIAL NEOPLASIA ASSOCIATED WITH HUMAN PAPILLOMAVIRUS

O‘rinbayeva Madina Ravshanbek qizi Master’s Student, Tashkent State Medical University. Department of Obstetrics and Gynecology, Pediatric Gynecology

Scientific Supervisor: Khakimova G.G., PhD, Associate Professor. Department of Oncology, Pediatric Oncology and Palliative Care. Tashkent State Medical University

Relevance:

Cervical intraepithelial neoplasia (CIN) is a common precancerous condition among women and represents a key precursor stage of cervical cancer. Modern epidemiological studies demonstrate that human papillomavirus (HPV), particularly high-risk types 16 and 18, plays a leading role in the development of CIN. According to available data, HPV is detected in 90–99% of CIN II–III cases (Schiffman et al., 1993). The widespread prevalence of HPV infection and its significant socio-economic burden determine the high relevance of this problem.

Objective:

To analyze the epidemiological characteristics of HPV-associated cervical intraepithelial neoplasia, including its prevalence, age distribution, and major risk factors.

Materials and Methods:

This thesis is based on the analysis of international and regional epidemiological studies, systematic reviews, and meta-analyses. Data on HPV prevalence, CIN grades (CIN I, II, III), age distribution, and key risk factors were comparatively evaluated. Information on population-based screening programs and vaccine effectiveness was also included (Zhao et al., 2012; Kalliala et al., 2020).

Results:

The analysis showed that HPV infection is highly prevalent among sexually active women, with the highest rates observed in the 20–30 age group. However, most infections are transient and are cleared within 1–2 years. Only persistent HPV infection leads to the development of CIN (Stanley, 2010).

CIN I is more frequently detected in younger women and often undergoes spontaneous regression, whereas CIN II–III is more common in women over 30 years of age and is associated with a higher risk of malignant transformation.

Epidemiological data indicate regional differences in CIN prevalence, with higher

rates observed in developing countries, largely due to insufficient screening programs (Franco et al., 2003).

Major risk factors include early onset of sexual activity, multiple sexual partners, immunosuppression, HIV infection, co-existing sexually transmitted infections, and socio-demographic factors (Holly, 1996). In addition, persistent infection with high-risk HPV types is the most important determinant of CIN development.

In recent years, the introduction of HPV vaccination has led to a reduction in the incidence of high-grade CIN. Population-based studies show that increased vaccine coverage is associated with a significant decrease in CIN II–III cases (Benard et al., 2017).

Conclusion:

HPV infection is the primary etiological factor of cervical intraepithelial neoplasia, and its epidemiology is closely related to infection prevalence, persistence, and associated risk factors. Screening programs and preventive vaccination play a crucial role in reducing the burden of this disease.

REFERENCES

1. Schiffman, M.H., Bauer, H.M., Hoover, R.N. et al. (1993). *Epidemiologic evidence showing that human papillomavirus infection causes most cervical intraepithelial neoplasia. Journal of the National Cancer Institute, 85(12), 958–964.*
<https://academic.oup.com/jnci/article-abstract/85/12/958/1085600>
2. Stanley, M. (2010). *Pathology and epidemiology of human papillomavirus infection in females. Gynecologic Oncology, 117(2 Suppl), S5–S10.*
<https://www.sciencedirect.com/science/article/pii/S0090825810000879>
3. Franco, E.L., Schlecht, N.F., Saslow, D. (2003). *The epidemiology of cervical cancer. The Cancer Journal, 9(5), 348–359.*
https://journals.lww.com/journalppo/abstract/2003/09000/the_epidemiology_of_cervical_cancer.4.aspx
4. Zhao, F.H., Lewkowitz, A.K., Hu, S.Y. et al. (2012). *Prevalence of human papillomavirus and cervical intraepithelial neoplasia in China: a pooled analysis. International Journal of Cancer.*
<https://onlinelibrary.wiley.com/doi/abs/10.1002/ijc.27571>
5. Kalliala, I., Athanasiou, A., Veroniki, A.A. et al. (2020). *Incidence and mortality from cervical cancer after treatment of CIN: a systematic review. Annals of Oncology.*
<https://www.sciencedirect.com/science/article/pii/S0923753419390854>
6. Holly, E.A. (1996). *Cervical intraepithelial neoplasia, cervical cancer, and HPV. Annual Review of Public Health, 17, 69–84.*

<https://www.annualreviews.org/content/journals/10.1146/annurev.pu.17.050196.000441>

7. Benard, V.B., Castle, P.E., Jenison, S.A., Hunt, W.C. (2017). *Population-based incidence rates of cervical intraepithelial neoplasia in the HPV vaccine era. JAMA Oncology.*

<https://jamanetwork.com/journals/jamaoncology/article-abstract/2554749>

8. Insinga, R.P., Perez, G., Wheeler, C.M. et al. (2011). *Incident cervical HPV infections and progression to CIN. Cancer Epidemiology, Biomarkers & Prevention, 20(2), 287–296.*

<https://aacrjournals.org/cebp/article-abstract/20/2/287/68605>

9.