

Perspective on Cervical Cancer, Primary and Secondary Preventive Measures-Where Do We Stand?

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Cervical cancer is the fourth most common cancer among women worldwide. According to the World Health Organization (WHO), about 291 million women are estimated to be infected with HPV globally with an average prevalence of cervical Human Papilloma Virus (HPV) infection of around 10% in healthy women, but even higher (20-30%) in some regions of Latin America and Sub-Saharan Africa (1).

Most of the cervical cancer is caused by persistent HPV infection. Human papillomavirus is a double-stranded DNA virus from the Alpha Papillomaviridae family, with over 150 known genotypes. Infection with HPV is one of the most common sexually transmitted infections (STIs), which spreads through unprotected sexual behaviors such as vaginal, anal and oral intercourse, as well as non-penetrative sexual behaviors and skin-to-skin contact (2). HPV genotypes are categorized into two groups: high-risk and low-risk. High-risk HPV, also known as oncogenic HPV infections, has the potential to cause precancerous lesions and eventually cancer if left untreated. The common high-risk genotypes include HPV 16, 18, 31, 33, 35, 45, 51, 52, 56, 58, 59, and 68. Low-risk HPV, or non-oncogenic infection, does not cause cancer but can lead to low-grade conditions such as genital warts and laryngeal papilloma. HPV 16 and 18 are the most common types associated with an increased risk of cervical cancer (3).

The risk of acquiring HPV is influenced by various factors such as multiple sexual partners, presence of

other STIs, male circumcision, immunosuppression, hormonal contraceptives, substance use and dietary deficiency. Individuals with weakened immune systems, such as people living with Human Immunodeficiency Virus (HIV), are at a higher risk of HPV infection. Most people with HPV infection do not have any symptoms, they are transient and are usually cleared by immune system within two years (4). HPV infection is also closely related with gender-related dynamics, such as empowerment, decision-making, and exposure to gender-based violence. However, more studies are needed to understand the role of violence and gender based dynamics in influencing girl's and women's risk of HPV and cervical cancer in developing countries as existing evidence mainly comes from high-income contexts. Persistent infection with high-risk HPV genotypes can result in premalignant and malignant lesions which typically take over 10-20 years to develop. Most studies define persistent infection as the presence of the same genotype of HPV for 6 or 12 months detected at one or more follow-up visits.

HPV DNA based testing has been recommended as the preferred screening method by World Health Organisation with either screen and treat or screen, triage and treat approach every 5 to 10 years beginning at the age of 30 years for general population and 25 years for women living with HIV with regular screening every 3-5 yearly. After 50 years, screening is stopped after two consecutive

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negative screening results consistent with the recommended regular screening intervals (5).

Where HPV DNA testing is not yet operational, Visual Inspection with Acetic Acid (VIA) or cytology (PAP smear or Liquid Based Cytology) can be used at a regular screening interval of every 3 years as the primary screening test, among both the general population of women and women living with HIV.

HPV vaccines are highly effective in preventing HPV infection and its sequelae. Currently, there are four prequalified prophylactic HPV vaccines. There are two bivalent vaccines that protect against HPV 16 and 18 with some cross-protection against HPV 31, 33, 45 (Cervarix, Cecolin), one quadrivalent vaccine that protects against HPV 6, 11, 16 and 18 (Gardasil 4) and one nonavalent vaccine that protects against HPV 6, 11, 16, 18, 31, 33, 45, 52 and 58 (Gardasil 9) (6)

A global strategy towards elimination of cervical cancer was adopted by WHO in 2020 that calls for 90% of 9-14 years old girls to be fully vaccinated with HPV vaccine by 2030, 70% of women screened using a high-performance test by the age of 35, and again by the age of 45, and 90% of women with pre-cancer treated and 90% of women with invasive cancer managed (7). Unfortunately, the global uptake of HPV vaccination among girls 9-14 years old is very low. While the importance of screening and vaccination is on an upscale, another aspect is also to look into the burden of HPV infection in the community in the defined demographic setup to re look into the HPV vaccine effectiveness depending upon the prevalence of particular genotype and incidence of persistent infection in the defined population.

Abbreviation

None.

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Author Contributions

Both author has equally contributed.

Conflict of Interest

The authors declare no conflict of interest.

Ethics Approval

Not applicable

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