



Human Papillomavirus(HPV) Vaccination in India: Challenges and The Way Forward

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ABSTRACT

The World Health Organisation understands the importance of routine HPV vaccination in national immunisation regimens because cervical cancer and other HPV-related illnesses are major global public health issues. Regardless of the Indian government's efforts to include HPV vaccination in the National Immunisation Programme and decrease vaccine costs, there are significant barriers to vaccination implementation in India, including insufficient epidemiological evidence for illness prioritisation, vaccine duration, parental attitudes, and vaccine acceptance. Research studies should consider the wider context of improving life-long immunisation, comprehensive adolescent primary health care, and screening of cervical cancer. Educational measures for healthcare staff, followed by socially and culturally sensitive public awareness campaigns, are critical to meeting the WHO objective of eliminating cervical cancer by 2030.

Key Words: Cervical cancer, HPV vaccine, Human papillomavirus, Prevention

INTRODUCTION

According to Globocan 2020, approximately six lakh new cases of cervical cancer were reported in 2020 globally, with this cancer accounting for 341,831 fatalities.¹ Cervical cancer is India's second most prevalent malignancy, responsible for about one-fourth of all cervical cancer deaths worldwide, despite being entirely avoidable.² The condition is even more concerning in the rural population, where a majority of women are unaware and uneducated about the dangers of cervical cancer and the scarcity of healthcare resources. Poor prognosis resulting from late diagnosis is widespread worldwide, especially in low-resource settings. Women in rural areas come with advanced stages of HPV-caused cervical cancer and lack therapeutic options. Vaccination against human papillomavirus (HPV) is the most promising method for preventing cervical cancer.³

For prompt detection and prevention of cervical cancer, interventions from therapeutic HPV vaccines to different diagnostic methods, including visual examination with acetic acid or Lugol's iodine, Papanicolaou test, and HPV DNA testing are used. Even though cervical cancer screening recommendations have been made, coverage is still low across the country.⁴ HPV vaccine pilot trials began in 2009 but were ceased due to apparent adverse outcomes that were later de-

termined to be not associated with HPV immunisation.⁴ An exploratory study was done in India to identify the problems and hurdles to HPV vaccine intent among women. The study explored stigma, fear, a lack of understanding, accessibility, acceptance, and limitations due to a lack of explicit recommendations and promotion of the HPV vaccine.⁵

It is necessary to conduct thorough health education and awareness campaigns, community dialogues, seminars, and interactive sessions with women to address HPV, its connection to cervical cancer, and how to avoid it. The pharmaceutical companies developing and marketing the HPV vaccine can undertake educational campaigns to create awareness of HPV infections. Furthermore, the government is considering the incorporation of vaccines into the routine immunisation schedule, but first, the people should be given appropriate information.⁶

Most women diagnosed with cervical cancer are from rural areas and have low socioeconomic status. Poverty is linked to poor screening—inadequate screening and treatment results in the development of invasive cancer, which is fatal. The HPV vaccine is not meant to replace the Pap test.⁵ Cervical cancer screening, beginning at age 21, is still essential in preventive health care. Besides HPV infection, major risk factors for cervical cancer include age at marriage, sexual

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history, reproductive health, and hygiene, prolonged consumption of oral contraceptives, smoking, number of pregnancies, nutritional status etc.⁵

Once effective strategies for reaching adolescent girls for HPV vaccination have been identified, other health interventions for this population can be delivered. These include immunisation against hepatitis B, rubella, tetanus, measles, and eventually, HIV; deworming; malaria intermittent preventive treatment; vitamin A supplementation; net bed distribution; treatment of schistosomiasis, trachoma and filariasis, iodine and iron supplementation; nutritional supplementation; and education about hand washing, drugs, tobacco, life-choice decision-making, and body awareness. Using a single system to provide various interventions — concurrently with or apart from HPV vaccination — could boost the cost-effectiveness of all interventions.⁶

The best age to vaccinate against HPV is nine, ideally before girls and boys have their first sexual interaction. It is also advised to have “catch-up” vaccinations up to 26 or later, depending on the doctor’s advice. CERVAVAC, an indigenous HPV vaccine developed by the Serum Institute of India, is expected to be available by mid-2023. The vaccine’s low cost could aid in the abolition of cervical cancer.⁷ In addition, three more Indian vaccine firms are working on the HPV vaccine. For now, our country is entirely dependent on foreign manufacturers for HPV vaccines. Three international manufacturers around the globe manufacture HPV vaccinations, and two of them offer them to India. There are now three HPV vaccinations on the market – Gardasil 9, Gardasil-4, and Cervarix.⁷

Efforts are being undertaken in other states to incorporate the HPV vaccination into immunisation systems, with some success. The pilot projects’ high acceptance and coverage indicate that introducing HPV vaccination into India’s immunisation programme is viable and scalable. To achieve the elimination targets, however, organised national programmes for both cervical cancer screening and HPV vaccination and treatment must be executed and implemented across the nation.⁸ Health workforce competencies across all three pillars (HPV vaccination, cervical cancer screening, and prompt treatment) must be strengthened to achieve long-lasting success to elimination. If properly implemented, our chances of attaining the World Health Organization’s aim of vaccinating 90% of girls by age 15 and eliminating cervical cancer by 2030.⁸

The new vaccine is a significant step forward in India’s quest for egalitarian healthcare. Long-term immunogenicity, effectiveness, and duration of protection with single-dose HPV regimens in boys, girls aged 9-14 years, older men and women, and children under the age of 9 years will require extensive research. There is an urgent need for evidence on the efficacy and immunological response of reduced dose schedules in immunocompromised patients and HIV-infected

individuals who received a single-dose HPV vaccination prior to HIV seroconversion.⁹

CONCLUSION

Knowledge, awareness, and accurate information from reliable sources will be crucial in increasing the uptake of HPV vaccination. Raising awareness through a determined and effective communication strategy will also be critical in ensuring girls can receive the vaccine. Implementation studies should be conducted, particularly in high-risk populations, to find ways for increasing and maintaining HPV vaccine uptake. The studies should consider the broader context of improving life-course immunisation, cervical cancer screening, and comprehensive adolescent primary health care. Educational measures for healthcare staff, followed by socially and culturally sensitive public awareness campaigns, are critical to meeting the WHO objective of eliminating cervical cancer by 2030.

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