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HUMAN PAPILLOMA VIRUS- RELATED DISEASE AND HPV VACCINATION

***Presha Patel**

India.

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***Corresponding author: Presha Patel**
India.

ABSTRACT
The recently approved quadrivalent Human papilloma virus vaccine targets the Human papilloma virus (HPV) strains responsible for approximately 70% of cervical cancers and 90% of genital warts. It is also effective in reducing the incidence of HPV-related conditions, especially when given prior to exposure to HPV. The vaccine is recommended for all girls aged 11 to 12 years followed by 2nd vaccination for women up to the age of 26. Most insurance plans cover the vaccine. Human papilloma virus is the most common sexually transmitted infection in the United States and persistent HPV infection is strongly associated with risk of cervical cancer and genital warts. HPV vaccination reduces the incidence of HPV-related cancers and precancerous lesions in the United States and abroad, though decisions regarding implementation of vaccination remain.

KEYWORDS: Human Papillomavirus, Cervical Cancer, Genital warts, Sexually transmitted disease, Vaccination.

INTRODUCTION

Although most HPV infections clear, persistent HPV infection is strongly associated with risk of cervical cancer and genital warts. The recently approved quadrivalent (types 6, 11, 16 and 18) HPV vaccine targets the HPV strains responsible for approximately 70% of cervical cancers and 90% of genital warts. It is also effective in reducing the incidence of HPV-related conditions, including cervical intraepithelial neoplasia (CIN) grades l, 2 and 3; adenocarcinoma in situ (AIS); vulvar and vaginal neoplasia; and genital warts, especially when given prior to exposure of HPV.

Human papilloma virus (HPV) is the most common sexually transmitted infection in the United States with approximately 80% of women having acquired an infection by the age of 50.[1] The vaccine is recommended for all girls ages 11 to 12 years followed by 2nd vaccination for women up to the age of 26. Most insurance plans cover the vaccine. A second bivalent HPV vaccine is currently pending approval by the US Food and Drug Administration (FDA). HPV vaccination reduces the incidence of HPV- related cancers and precancerous lesions in the United States and abroad, though decisions regarding implementation of vaccination remain.

Studies on the natural history of HPV infections have shown that in young women, the vast majority of HPV infections are transient. A study of college aged women how that approximately 70% of women with HPV infections became HPV negative within 1 year and as many as 91% of them became HPV negative within 2 years, with a median duration of the infection of 8 months.[13] Certain HPV types such as HPV16, are associated with increased rates of persistence; however in the previously mentioned study, the 24-month clearance of HPV 16 was 72%. Thus, the majority of these infections clear. Other factors associated with persistent HPV infection include age higher than 30 years, parity, infection with multiple HPV subtypes, immunosuppression, smoking and oral contraceptive use.[15]

The risk of HPV infection that do not clear is persistent and cause progression of cervical epithelial abnormalities. Early HPV infections may be manifested by mild changes in the cervical epithelium, which can be detected by Papanicolaou testing. Cytologic changes in the squamous intraepithelial lesions (SILs) and can be characterized as low grade or high grade. When diagnosed by histology, HPV-associated changes are termed cervial intraepithelial neoplasia (CIN) and are graded from 1 to 3, depending on the depth of abnormal cells. CIN 1 include mild dysplasia

and condyloma (anogenital warts) and includes lesions in which only one third of the depth of the epithelium is abnormal. CIN 2 or moderate dysplaia includes lesions with abnormal proliferation of up to two thirds of the epithelium. CIN 3 includes severe dysplasia and carcinoma in situ (CIS), the entire epithelium is abnormal.[16] Similar grading exists for vulvar intraepithelial neoplasia (VIN-1-3) and vaginal intraepithelial neoplasia (VAIN 1-3).

Administering the Vaccine

The efficacy of HPV vaccination is greatest when given to HPV-naïve women. Given the high correlation between HPV infection and onset of sexual contact (digital, oral, anal or vaginal), the ideal time to give the vaccine is prior to initiation of sexual activity. Data form the 2003 Youth Risk Behaviour Survey revealed that 7.4% of youths report sexual intercourse before the age of 13 years and by the end of high school ore than 60% of adolescents have had intercourse, with 20.3% having had more than 4 lifetime partners.[27]

When the FDA approved Gardasil in June 2006, the vaccine was approved for use in girls and women aged 9 to 26. The advisory committee on immunization practices (ACIP) reccommended that the vaccine should be administered to girls aged 11 to 12 as part of the routine vaccination schedule, and that it could be administered to girls as young as 9 years of age. It should also be offered to girls and women aged 13 to 26 who have not yet completed the vaccination series.[28] The American college of Obstetricians and Gynecologists, the Society for Adolescent Medicine, and the American Academy of Family Physicians supprt similar recommendations. As gynecologists, it is our responsibility to vaccinate all women between 9 and 26 years who have not yet completed the vaccination series.

The HPV vaccine is generally well tolerated by patients. In clinical trails, the most common side effects were injection site pain, swelling and erythema. These were seen at higher rates among patients receiving the active vaccine compared with those receiving placebo; however these side effects were rated as mild or moderate in intensity by 94.3% of participants. There was overall no difference in the rates of serious side effects between vaccine and placebo recipients. Very few patients (0.1%) withdrew from the trials due to adverse reactions. The only absolute contraindications to Gardasil is hypersensitivity to the active substances or to any of the inactive ingredients in the vaccine and individuals who develop symptoms suggestive of hypersensitivity after receiving the dose of the vaccine, should not receive further doses. The vaccine is not reccomended for use in pregnant women and caution should be used in women who are breastfeeding.

Effectiveness does not appear to be altered by use of oral contraceptives or concomitanat administration of the hepititis.

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