



International Medical Clinic Family, Paediatric & Travel Medicine

Cervical Cancer – an update on HPV Vaccines

Approximately 20 million people are currently infected with genital human papillomavirus (HPV) in the United States. As many as half of these infections are among adolescents and young adults, ages 15 through 24 years of age. HPV is so common that most sexually active adults become infected at some point in their lives without knowing it, because of the absence of symptoms.

Most of the time, the infection is cleared by the body's immune system within 1 to 2 years. In 10 to 20 percent of patients, however, the infection persists. In this situation, there is a higher likelihood of developing cervical cell abnormalities or cancer.

Over 100 different types of HPV have been identified; 40 of these are known to infect the cervix and 15 are known to cause most cases of cervical cancer. Researchers have labeled the HPV types as being high or low risk for causing cervical cancer. HPV types 6 and 11 can cause warts and are low-risk types because they do not cause cervical cancer. Types 16 and 18 are the high-risk types that cause most cases (70%) of cervical cancer.

Cervical cancer is the second leading cause of cancer deaths in women. Worldwide, more than 500,000 women are diagnosed with cervical cancer and over 280,000 women die from it each year.

Protection through vaccination

Two vaccines (Gardasil and Cervarix) are now available to prevent infection with the two types of HPV (16 and 18) known to cause 70% of cervical cancers. Large clinical trials have demonstrated high efficacy and safety of these vaccines. It is hoped that the use of these vaccines will significantly reduce the number of women who develop cervical cancer.

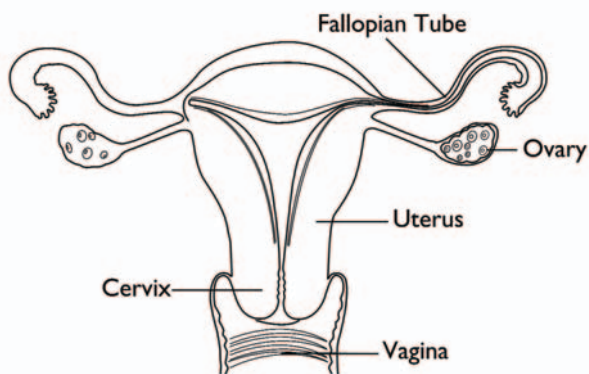
The quadrivalent HPV vaccine, Gardasil, was the first vaccine developed to protect against most cervical cancers and genital warts. This vaccine works by preventing four HPV types: HPV 16 and 18, which cause 70% of cervical cancers, and HPV 6 and 11, which cause 90% of genital warts.

Cervarix is a newer, bivalent vaccine proven to prevent HPV 16 and 18 infections. It has been shown to have high efficacy approaching 100% against HPV 16 and



18 - related high-grade cervical intraepithelial neoplasia (CIN). It does not protect against HPV 6 and 11 which cause genital warts. Cervarix is manufactured using a different system from Gardasil, with an adjuvant known as AS04. This system has been shown to generate a stronger and longer-lasting immune response. Thus, the quality and duration of protection provided by Cervarix is expected to be higher, a factor which played a part in the UK government's decision to use Cervarix in its HPV vaccination programme for girls. Cervarix has been licensed for use in 64 countries around the world including the 27 member countries of the EU, Mexico, Australia, Singapore and the Philippines, and is awaiting the United States' FDA approval.

Both vaccines are preventative, and will not treat existing diseases or conditions caused by HPV.



Vaccine side effects and precautions

The HPV vaccines have been shown to be generally safe and well-tolerated, the most common side effect being a mild injection site reaction (redness, tenderness, swelling) in some individuals. The vaccines are not currently recommended during pregnancy, although there are no known risks to a foetus if a woman is vaccinated inadvertently. There is no thimerosal (a mercury derivative used as a preservative) in the HPV vaccines. There are no known long-term side effects of the HPV vaccines.

Vaccine timing and dose

Both HPV vaccines are given by injection and require three doses; the first injection is followed by a second and third dose two and six months later, respectively.



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Who should be vaccinated?

In the United States, Gardasil is recommended for all girls and women who are between ages nine and 26 years; it is given to girls between 11-12 years old as part of the national immunisation schedule. Cervarix is not yet available in the US. In the UK, since September 2008 routine HPV vaccination with Cervarix has been introduced for girls between 12-13 years of age as part of the national immunisation programme.

With both vaccines, it is highly recommended for girls to be vaccinated before becoming sexually active, since the vaccine does not help to eliminate HPV infection after it has occurred.

“Both HPV vaccines, Gardasil and Cervarix, are available at IMC”

In Australia, Cervarix is licensed for use in females between age 10 and 45 years of age and for boys age nine to 15 years. The additional benefit of vaccinating boys and men in reducing the risk of cervical cancer is unknown. Studies are currently underway to address this question. Cervarix is the only HPV vaccine licensed for use in women above 26 years of age, but currently more data is needed before recommendations for vaccinating older women can be made.

Duration of protection

While it is not known exactly how long the vaccines protect against HPV infection, clinical trials demonstrate protection for at least five years. Further studies are in progress to determine whether a booster dose would be required to extend the duration of protection.

Need for Pap smear

It is important to remember that the HPV vaccines do not protect against all HPV types that cause cervical cancer. In all sexually active women, the most important preventive measure against cervical disease remains regular Pap screening. Young women are advised to begin Pap screening at age 21 or within three years of initiating sexual activity, whichever comes first.



GlaxoSmithKline

This article has been supported by GSK who is a major provider of vaccines to IMC and our patients.

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