

Taking action against cervical cancer: HPV vaccination to protect girls and adult women

Cervical cancer is the seventh most common cancer amongst women in Hong Kong, with 500 new cases reported in 2015, accounting for 3.3% of all new cancer cases in the female population.¹ At an interview, Dr Charas Yeu-Theng Ong, Specialist in Obstetrics and Gynaecology in Hong Kong, discussed the importance of cervical cancer screening as well as the role of human papillomavirus (HPV) vaccination in young girls before they become sexually active and in women who are already sexually active.



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According to the Hong Kong Cancer Registry, the lifetime risk of developing cervical cancer before 75 years of age is one in 128.¹ Cervical cancer is mostly preventable through regular screening and early treatment of premalignant lesions,² yet according to Dr Ong, the screening rate has remained very low in Hong Kong. The Hong Kong Department of Health (DH) reported that only 60.5% of women aged 25–64 years had ever undergone cervical cancer screening.³

Persistent infection with high-risk HPV can cause cervical, vulvar, vaginal and anal cancers, as well as genital warts.⁴ Epidemiologic studies suggest that up to 75% of all sexually active individuals will eventually be infected with HPV at some point during their lifetime, and most infections are subclinical.⁵

According to Dr Ong, prevention and early treatment of premalignant lesions are the most cost-effective measures against cervical cancer. In particular, she recommends regular screening and HPV vaccination as effective ways to prevent cervical cancer.^{6,7}

Protecting girls from HPV before sexual exposure

The US Centers for Disease Control and Prevention (CDC) guidelines recommend HPV vaccination for girls and boys at 11–12 years of age.⁷ The best

protection against HPV is achieved in those who have time to develop an immune response after completing the vaccine series before sexual exposure.⁷

According to Dr Ong, some parents may be hesitant to vaccinate their children against HPV on the pre-conception that it may encourage earlier sexual debut. However, study results have shown that early vaccination provides preadolescents with greater knowledge regarding the use of contraception.⁸ Results also showed that sexual debut did not differ significantly between vaccinated and unvaccinated groups (hazard ratio [HR], 0.94; 95% confidence interval [CI], 0.88 to 1.02).⁸ In line with these findings, the US CDC also highlights the importance of protecting children against HPV before the issue of sexual exposure arises.⁷

Is HPV vaccine still beneficial for sexually active women?

A study in Hong Kong examined the age-specific prevalence of HPV infection in 2,604 women enrolled for cervical screening. Results showed two peaks of HPV infection – at 26–30 and 46–50 years of age.⁹

Furthermore, as most HPV-positive sexually active women are infected with only one HPV type (**Figure 1**), HPV vaccines can still potentially protect sexually active women against other HPV types.¹⁰ In the study, women aged 24–45 years were randomized to receive quadrivalent HPV vaccine

(n=1,910) or placebo (n=1,907). Vaccine efficacy against the first co-primary endpoint (infection of 6 months or a longer duration and cervical and external genital disease due to HPV 6, 11, 16, 18; and due to HPV 16 and 18 alone) in the per-protocol population was 90.5% (95% CI, 73.7 to 97.5).¹⁰ These findings provide strong evidence that sexually active women can still potentially benefit from HPV vaccination.

Three types of HPV vaccines (bivalent, quadrivalent and nonavalent) are currently available. All three HPV vaccines help to prevent infections from HPV 16 and 18, which account for about 70% of cervical cancers. The nonavalent vaccine covers five additional HPV types, which account for around 90% of cervical cancers.^{4,11}

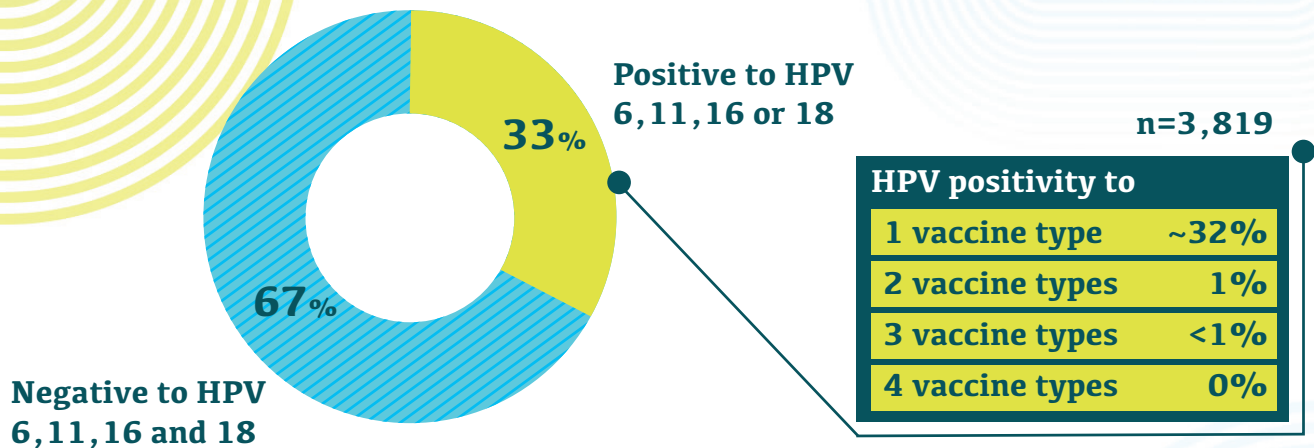
The safety profile of HPV vaccines is endorsed by the US CDC and Hong Kong Centre for Health Protection, and the vaccines are also recommended by these organizations.^{5,7}

Cervical cancer screening, however, is still required in vaccinated individuals as current vaccines do not offer full protection.¹²

Conclusion

Cervical cancer is one of the most preventable and treatable forms of cancer provided that HPV infection is prevented with vaccination and premalignant lesions are detected early and managed effectively.⁶ Early detection and effective management of premalignant lesions are highly cost-effective.⁶ However, HPV vaccination rate and cervical screening rate remained low.^{3,13}

Figure 1. Distribution of HPV 6, 11, 16 and 18 amongst women aged 24–45 years¹⁰



Study Design: 3,819 females aged 24–45 years were enrolled into a multisite, randomized, placebo-controlled, double-blind efficacy study to test the safety, immunogenicity, and efficacy of the quadrivalent HPV vaccine. Positivity to the vaccine types at baseline were tested prior to vaccination with 4vHPV or placebo. Coprimary efficacy endpoints included 6 months' or a longer duration of infection and cervical and external genital disease due to HPV 6, 11, 16, 18; and due to HPV 16 and 18 alone.

Dr Ong emphasized it is crucial that healthcare providers, along with the support of other related bodies, work together to improve awareness and education to boost regular cervical screening and HPV vaccination in Hong Kong.

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