

## **HPV Test for Early Detection of Cervical Cancer**

About 470,000 new cases of cervical cancer are found every year worldwide. Cervical cancer is now the 2<sup>nd</sup> cause of death among female cancers worldwide and takes 230,000 lives a year alone. In Hong Kong, 10 in 100,000 women have cervical cancer. About 440 new cases are found annually, and 125 patients died of the disease.

The new human papillomaviruses (HPV) test is effective to detect the presence of high-risk HPV, the viruses related to more than 90 percent of cervical cancer cases.

HPV are found inside cancer cells in the cervix but scientists have yet to find how the viruses cause abnormal cell changes and cervical cancer. In 1993, the Department of Obstetrics and Gynaecology, Faculty of Medicine, the University of Hong Kong, discovered that about one in 10 women in Hong Kong had HPV.

HPV are a group of more than 100 viruses. Fourteen or more HPV are highly related to cervical cancer and are termed high-risk types. Women infected with high-risk HPV will have an increased chance of getting cervical cancer.

By bio-molecular technology, the DNA of both the high-risk and low-risk HPV can be identified. Tests are available to detect high risk HPV. Hybrid Capture 2 is currently the only testing product for high-risk HPV approved by the US Food and Drug Administration in 2003.

HPV are mainly transmitted through close sexual contacts. Young women may have transient infection of HPV and the virus will disappear after some time. No symptom is associated with HPV infection although genital warts are caused by some low-risk HPV, which are unrelated to cervical cancer.

High-risk HPV will cause persistent infection in some women, which may develop to cervical cancer. Women who first engage in sexual intercourse at an early age have a higher incidence of HPV infection. During puberty the cervix is immature and the cervical cells are active, thus the chance of HPV infection increases. Having multiple sexual partners also increases the chance of HPV infection.

It normally takes 10 to 15 years for abnormal cell changes to develop to cervical cancer. The Bethesda System divides cell abnormalities mainly into three categories: Atypical Squamous Cells (ASC), Low-grade Squamous Intraepithelial Lesion (LSIL) and High-grade Squamous Intraepithelial Lesion (HSIL).

Pap smear test has been used for 60 years to look for cell abnormalities of the cervical cell samples under the microscope. To perform Pap smear test, the woman lies down and the doctor puts a speculum inside the vagina and open it. Cervical cell samples will be collected by a special stick and placed on a small glass slide or a small glass of solution. The sample will then be analyzed for abnormalities. Pap smear test is found to be effective to reduce the incidence of cervical cancer and the mortality caused by the disease if more than 80 percent of target women have Pap smear test regularly.

With the two available tests, Hong Kong SAR Government and the Hong Kong College of Obstetricians and Gynaecologists suggest women to have Pap smear first. If atypical cell abnormalities are detected, HPV test will then be performed. When both cell abnormalities and high-risk HPV infection are found, the chance of abnormal cervical abnormality increases and women will be advised to have a colposcopic examination.

Currently, HPV infection cannot be prevented or cured. The use of condom may reduce but cannot prevent HPV transmission. Having regular Pap smear test is the best way to prevent cervical cancer. Women who have had sexual lives and aged 25 or above should have Pap smear test every year. If the Pap smear test result is normal for two consecutive years, the test should be repeated every three years.