

Cancer of the cervix (screening and its prevention)

Cancer of the cervix is the second most common cancer (after breast cancer) among women. Fortunately *it is preventable and if occurs, can be detected at an early stage*. It is therefore important that women are educated and be aware of the prevention methods and the availability of various screening tests.

Who gets it?

Cancer of the cervix occurs in women who are sexually active. It is more likely to occur among those in the 30's and above.

Cancer of the cervix should not be confused with cancer of the other pelvic organs. The other (gynaecology) cancers being that of ovarian cancer, uterine (womb) cancer, fallopian tube cancer, vaginal cancer and vulvar cancer.

What causes it?

It is now known that cancer of the cervix is caused by human papilloma virus (HPV). HPV is very commonly found in the general population. It infects the skin through physical contact and usually results in warts. Any part of the body can be affected but commonly in fingers and palm, toes and soles, neck and genitals.

There are many types (more than 100 types) of HPV and each affects different part of the body. For example, HPV type 2 and 4 commonly affect fingers and feet but not the genitalia. Conversely, type 6 and 11 that affect the genitalia do not affect the fingers.

HPV that affects the genitalia

With improving technology, more HPV types affecting the genitalia will be discovered. Currently, the many HPV types affecting the genitalia are divided into "high-risk" and "low risk". This is an important classification as the former *may* eventually cause cancer of the cervix (as well as vagina, vulvar, penile, anal and oropharyngeal) while the latter causes genital warts.

The known high risk HPV are types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66 and 68.

Progression of disease (from normal cervical tissue to cancer of the cervix)

High risk HPV is contracted by physical contact, namely sexual intercourse. The body reacts by fighting the virus with its immune system. Improved immune system will aid the fight against the virus whereas decreased immune system (poor health, HIV infection and smoking) results in persistent infection.

Persistent infection of high risk HPV, over time (usually many years), cause cancer of cervix.

It should be noted that prior to the development of cancer of the cervix, the cervix undergo a change known as dysplasia or cervical intraepithelial neoplasia (CIN). This change (CIN) is considered as precancerous and can be detected by screening process.

Screening tests available at the clinic

Screening for cervical cancer is essential as it is effective in preventing its development. The main purpose of screening test is hence *to detect precancerous changes* rather than the cancer itself. Of course, cancer of the cervix is also detected and hopefully is found at an early stage because of the frequent/annual screening.

The screening tests available in the clinic are **ThinPrep**, **HPV DNA detection test**, **CareCervix** (HPV DNA *integration* test) and Carl Zeiss **colposcopy**.

ThinPrep is a form of liquid based cytology whereby the procedure removes contaminants and unnecessary cells so that only appropriate cells are being examined. The final examination is done under a microscope and assessed by properly trained histopathologists in Singapore.

Additional test for HPV infection is advisable to evaluate the patient's risk of developing cervical cancer. The normal test detects the *presence* of HPV DNA in the cervical secretion but a *newly developed* test (**CareCervix**) looks at the *integration* of HPV DNA into human genome (DNA). The new test is much more useful in assessing the risk of malignant change in an infected patient.

Colposcopy further improves the accuracy of the screening test. It may be done as part of routine screening test, or certainly, when the Pap smear result is reported to be abnormal. The procedure is similar to having a pap smear taken- it is painless and does not require anaesthesia. The result is available immediately.

Colposcopy magnifies the area of abnormalities using a microscope and where necessary, a (targeted) biopsy is taken. The biopsy will then confirm the diagnosis.

What happens if the test results are positive/abnormal?

Abnormal ThinPrep result does not always mean you have cancer. Do not panic and do read the result carefully, as it may simply mean you have *precancerous* cells, which if left untreated, may develop into cancer many years later.

Although ThinPrep is accurate, false positive result does occur. Hence, the report may say you have abnormal cells but in reality you are completely "normal", i.e. you have no cancer cells. However if the result is positive, **in conjunction with HPV infection**, you are more likely to have precancerous cells (often reported as CIN lesion). You should then undergo colposcopic examination. The new test that looks at HPV DNA integration into human DNA should also be performed to assess the risk of malignant change.

At colposcopy, proper assessment of the cervix is made. If an abnormality is found, a biopsy is taken at that site. No anaesthesia is needed for this procedure.

When CIN is confirmed following cervical biopsy, treatment with large loop excision of the transformation zone (LLETZ) is advised.

Large loop excision of the transformation zone (LLETZ)

LLETZ is the definitive treatment with a very effective outcome of removing the abnormal areas and hence the risk of cervical cancer development. It is an outpatient procedure, requiring only local anaesthesia. A heated wire loop is used to remove the affected transformation zone of the cervix. Often the removed tissue is being examined again by a histopathologist to confirm the diagnosis (of CIN) and the clearance of the excision margin.

Follow up

To be certain that no remaining abnormality is left or no new lesion develops, frequent follow up with ThinPrep and colposcopy is recommended.

Prevention by vaccination

Vaccine against high risk HPV (hence, to some extent, against cancer of the cervix) is available. In Indonesia, the vaccine available is against type 16 and 18. This gives *limited* protection as type 16 and 18 are said to be the cause of 70% of cervical cancer.

The latest vaccine (not available in Indonesia at the time of writing) is against type 16, 18, 31, 33, 45, 52 and 58 (in addition to type 6 and 11 which cause genital wart but not cancer). These nine types of HPV account for 89% of HPV-related anogenital cancers and 90% of genital warts.

The vaccine should be given to all women before they are sexually active. Equally, sexually active women should consider being vaccinated if she is not already infected and if she is still at-risk.

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