

HUMAN PAPILLOMAVIRUS AND CERVICAL CANCER

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ABSTRACT

Cervical cancer, caused by the Human Papillomavirus (HPV), is a significant public health concern worldwide, and it remains a critical issue in Singapore. As HPV is a sexually transmitted virus, the stigma surrounding cervical cancer and its association often hamper efforts to increase uptake of these lifesaving interventions. Family physicians can help break the stigma related to HPV and seize the opportunity for effective primary (HPV vaccination) and secondary (cervical screening and treatment) cancer preventive approaches.

Keywords: Cervical cancer, Human Papillomavirus, HPV, HPV vaccination, Singapore, cervical screening, self-sampling, cervical cancer treatment

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INTRODUCTION

In the 1960s, cervical cancer was a dreaded diagnosis with often grim prognoses due to the lack of effective treatment options. It was at one point considered as an AIDS-defining illness in a Human Immunodeficiency Virus (HIV) carrier. The development of the Pap smear test brought about a pivotal change, allowing for the detection of pre-cancerous changes in the cervix.

Today, the landscape of cervical cancer has transformed drastically due to the introduction of Human Papillomavirus (HPV) vaccines and improved screening methods. Despite these advances, late-stage diagnoses of cervical cancer remain a challenge.

Globally, 342,000 women die from cervical cancer each year. The overall survival rate has hovered around 60 percent, a timely reminder that prevention and screening save lives.

Cervical cancer continues to remain the 10th most common cancer, tied with stomach cancer among the female resident population in 2017-2021.¹ Singapore has seen a steady decline of the incidence of cervical cancer up to year 2015, but recently it has plateaued; late-stage discovery has shown signs of increasing.²

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Most if not all cervical cancer cases are linked to information with “high-risk” types of HPV, which is sexually transmitted.³ Seventy percent of all cases are HPV types 16 and 18.² In Singapore, HPV Type 52 and Type 58 have also been identified as significant contributors to cervical cancer, twice the global average.⁴ HPV Type 52 and 58 have been found to have an attribution rate of 15.4 percent in cervical cancer cases and 42.5 percent in high-grade lesions.⁴

STIGMA AND ITS IMPACT

Although cervical cancer incidence is low in comparison to breast, colon, and lung cancer, it is one of the most preventable and treatable cancers as almost all cases are linked to infection with high-risk HPV, which can be managed with effective primary (HPV vaccination) and secondary (cervical screening and treatment) preventive approaches.

With the stigma associated with cervical cancer and sexual activities, HPV has led to a reluctance in seeking screening and vaccination. In Singapore, a notable proportion of women have never had a Pap smear, with misconceptions about personal health and the necessity of the test contributing to the low uptake. About 64.8 percent of Singaporean women are reported to have done at least one Pap smear in her life,⁵ while 13.6 percent have never heard of a Pap smear test.⁵ Others are uncomfortable talking about it, or believe that it will not have a major impact on the normal functioning of their lives.

HPV VACCINES

HPV vaccines provide protection against high-risk HPV types that are strongly associated with cervical cancer. These vaccines have the potential to prevent approximately 70 to 90 percent of cervical cancer cases, 85 to 95 percent of anal cancer cases, 65 to 85 percent of vaginal cancer cases, and 75 to 90 percent of vulvar cancer cases.⁶⁻⁹ In Singapore, the available HPV vaccines are polyvalent, meaning they cover multiple HPV virus types. The broader the coverage of viruses in the vaccine, the more comprehensive the protection against HPV-related diseases, including genital warts.

One effective way of breaking the stigma is the inclusion of HPV vaccines as part of national vaccination programmes. In Singapore, since 2019, 13-year-old girls can receive free HPV vaccination as part of the national school-based vaccination programme with an initial uptake of 93 percent.⁶ Outside of school-based programmes, HPV vaccination continues to be recommended as a catch-up measure, with

subsidies for females up to and including 26 years of age.

HPV is not a virus that exclusively infects female epithelium; instead, it is a gender-neutral infection. HPV vaccination is globally recommended for both sexes, beginning from the ages of 9 to 14. Embracing a gender-neutral approach to HPV vaccination is crucial in preventing HPV-related diseases in both sexes and aligns with the World Health Organization's (WHO) call to eliminate cervical cancer. This inclusive approach can effectively reduce HPV infections transmitted throughout the population and contribute to destigmatising HPV prevention. While the school programme and subsidies do not include males, HPV vaccination is licensed for males in Singapore and is available at their own expense.

REGULAR SCREENING

No vaccine prevents all types of HPV that can cause cervical cancer. Women are recommended to continue with regular cervical screening. In 2022, the World Health Organization (WHO) revised global normative guidance on self-care interventions for health and well-being, with each recommendation based on extensive consultations and a review of existing evidence. Cervical cancer screening and treatment for pre-cancerous lesions remain essential in preventing death. WHO recommends using HPV DNA detection as the primary screening test rather than visual inspection, with acetic acid (VIA) or cytology in screen-and-treat approach among both the general population of women and women living with HIV.³

Although Singapore's National Screening Programme is heavily subsidised for female Singaporeans aged 25 years and above, screening rates in Singapore continue to remain low, indicating barriers to regular screening beyond cost. According to the latest National Population Health Survey in 2022, 89.9 percent of Singaporean women aged 25 to 74 years old⁷ reported being aware of cervical cancer screening tests but only about two in five (43.1 percent) women had undergone screening for cervical cancer within the last 3-5 years.⁷ This falls short of the global screening target of 70 percent coverage. Screening in Singapore is currently opportunistic without a cervical cancer registry.

Early detection through regular screening such as Pap smears and HPV DNA testing is critical for reducing the mortality and morbidity associated with cervical cancer. Therefore, the active involvement of family physicians is crucial in promoting regular screenings and breaking the stigma of early detection. Family physicians can play a pivotal role in educating and encouraging women aged 25 and above, who have been sexually active, to undergo timely screenings. They can provide guidance on the recommended screening modalities, such as Pap smears and HPV DNA testing, and ensure that women understand the significance of these tests in detecting precancerous changes and potential indicators of cervical cancer. These screenings serve as vital tools in detecting precancerous changes and potential indicators of

cervical cancer, enabling timely intervention and treatment.

SELF-SAMPLING

Self-sampling for cervical cancer screening has emerged as a significant advancement in enhancing screening accessibility and coverage. It has the potential to improve screening compliance by offering an alternative option for women who may feel hesitant about or resistant to traditional clinician-based sampling. By providing a more comfortable and convenient method, self-sampling encourages regular participation in screenings. Although self-sampling is not currently included in the National Screening Programme, self-testing options are already available in Singapore.

CANCER SURVIVAL AND TREATMENT

If cervical cancer is diagnosed at an early stage, the 5-year relative survival rate is more than 90 percent. If cervical cancer is diagnosed after it has spread to nearby tissues, organs, or regional lymph nodes, the 5-year relative survival rate is usually 40-60 percent.

It is however important to note that responses to treatment can vary greatly, and survival statistics are collected from large groups of people who may have received access to care. Factors such as age, overall health, and specific characteristics of the cancer can also influence survival.

An alternative treatment for HPV could involve a personalised approach based on patient factors such as age, comorbidities, and the desire to preserve ovarian function. For localised cervical cancer deemed unresectable, chemo-radiation is typically the primary treatment option after evaluation by a gynaecologic oncologist.

In cases of advanced cervical cancer, a combination of anti-vascular endothelial growth factor therapy (e.g., bevacizumab) and checkpoint inhibitors (e.g., pembrolizumab) has shown improved overall survival rates. Tailoring the treatment plan to the individual patient's tumour biology and specific factors is crucial in determining the most effective chemotherapy and targeted therapy regimen.

CONCLUSION

We stand at the forefront of a relentless battle against one of the most preventable yet still prevalent forms of cancer affecting women today: cervical cancer. Our collective voice as healthcare providers carries the weight of responsibility and the power of change. We have the means, the knowledge, and the opportunity to turn the tide against this disease. It is imperative that we act with urgency.

Family physicians are at the frontline of the battle against cervical cancer. By educating patients, dispelling myths, and actively promoting cervical cancer screening and HPV vaccination, family physicians can empower the population to take proactive steps in cancer prevention. With more facetime opportunities for long-term healthcare needs as the population adopts Healthier SG, family physicians gain

enhanced access to early intervention and opportunities to break the stigma related to screening and vaccination.

Let us pledge to dismantle the barriers of stigma and champion the cause of cervical cancer prevention.

REFERENCES

1. National Registry of Diseases Office. Singapore Cancer Registry Annual Report 2021. Available from: https://www.nrdo.gov.sg/docs/librariesprovider3/default-document-library/scr-ar-2021-web-report.pdf?sfvrsn=591fc02c_0
2. Er B, Xian CY. Cervical Cancer Epidemiology and Screening Behaviour in Singapore. Epidemiol. Dis. Control Div., Ministry of Health. 2018. Available from: <https://www.singstat.gov.sg/-/media/files/publications/society/ssnmar18-pg7-9.pdf>.
3. World Health Organization. WHO guideline on self-care interventions for health and well-being, 2022 revision. Geneva: World Health Organization; 2022. Available from: <https://www.who.int/publications/i/item/9789240052192>.
4. ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre). Singapore: Dec 2021. Available from: https://hpvcentre.net/statistics/reports/SGP_FS.pdf?t=1557677890057.
5. Lim TSC, Ismail-Pratt I, Goh LH. Cervical cancer screening and vaccination: understanding the latest guidelines. Singapore Med J. 2022 Mar;63(3):125-129. doi: 10.11622/smedj.2022045. PMID: 35509250; PMCID: PMC9251248.
6. Yam A. Misinformation regarding medical and social effects of HPV vaccination. Singapore Parliamentary Question. 7th May 2019. Available from: <https://www.moh.gov.sg/news-highlights/details/hpv-school-based-programme>
7. Health Promotion Board. National Health Population Survey 2022. Available from: https://hpb.gov.sg/docs/default-source/default-document-library/nphs-2022-survey-report.pdf?sfvrsn=3e8530aa_8.

LEARNING POINTS

- **Cervical cancer is one of the most preventable and treatable cancers as almost all cases are linked to infection with high-risk HPV, which can be managed with effective primary (HPV vaccination) and secondary (cervical screening and treatment) preventive approaches.**
 - **Advances in science will continue to offer better tools for enhanced protection, early detection, and treatment, leading to further progress in the prevention of cervical cancer. However, the persistent stigma surrounding HPV and cervical cancer can pose challenges to public health efforts, even with the tools at our disposal to combat this disease.**
 - **Early prevention and detection not only save lives but also reduce the need for extensive treatment, saving time and costs. Family physicians can play a pivotal role in encouraging early vaccination and promoting regular cervical screening for women.**
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