Cervical Cancer: Open Access

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Different Types of Screening Techniques Used in Cervical Cancer

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Abstract

Persistent infections with specific high-risk human papillomavirus (HR-HPV) strains are the driving cause of cervical cancer and precancerous injuries. HPV-16 and HPV-18 are related with more than 70% of cervical cancer. However, with later broad immunization efforts against cervical cancer, the disease rates of HPV-16 and HPV-18 have decreased over all age groups, whereas the infection rates of other HR-HPV strains have expanded. The non-16/18 HR-HPV strains play an important role in cervical injuries. These strains can be distinguished with amplified genotyping, and the 2019 American Society for Colposcopy and Cervical Pathology (ASCCP) guidelines recommended an HPV-based testing to assess the risk of cervical disease in patients. We reviewed and analyzed the clinical benefits of applying extended HR-HPV genotyping, which was published by the Universal Agency for Research on Cancer, to cervical cancer screening. This review concluded that cervical cancer screening needs to incorporate extended HR-HPV genotyping. The examination of extended HR-HPV genotyping in cervical intraepithelial lesions and cervical cancers can help direct clinical practices.

Keywords: High-risk human papillomavirus; Cervical cancer; Genotype; Cancer screening

Introduction

Cervical cancer is the fourth most common harmful tumor after breast cancer, colorectal cancer, and lung cancer, threating the health of women worldwide.1 Persistent contaminations by particular high-risk human papillomavirus (HR-HPV) strains are the driving cause of cervical cancer and precancerous lesions.2 The International Agency for Research on Cancer (IARC) published genotyping results of 14 HR-HPV strains: and 68. Among them, HPV-16 is the most common type of HR-HPV followed by HPV-31 and HPV-18, and more than 50% of cervical intraepithelial Neoplastic review 3 or higher (CIN3+) injuries are related to HPV-16 infection.5 Moreover, HPV-16 and HPV-18 are reportedly related to more than 70% of cervical cancer cases; thus, the research on HPV-16 and HPV-18 strains is the most extensive. The type-specific HPV prevalence in women with and without cervical lesions in the World was gathered from particular databases made at the Institute Catalan Oncology (ICO) and the IARC were shown. With the execution of the global HPV inoculation program, the proportion of HPV-16/18 infections has gradually decreased, whereas that of infections with other high-risk genotypes, such as HPV-52 and HPV-58, has relatively increased. In high-grade cervical lesions, HR-HPV genotypes, such as 31, 33, 52, and 58, are more common than [1-4].

A certain degree of inconsistency is associated with existing screening strategies, such as the sensitivity of cytological or HPV detection technology, may increase the risk of missed diagnosis as well as heavy burden on outpatients.11 At the same time, long-term follow-up increases patient uneasiness about cervical cancer, and thus extended HR-HPV genotyping plays an vital role in cervical cancer screening.12 Thus, risk evaluation, treatment, and prognosis of HR-HPV infections with these genotypes and assist stratification of extended HR-HPV genotyping is required. In this review, we analyzed the clinical benefits of applying extended HR-HPV genotyping to cervical cancer screening. Risk stratification based on extended HR-HPV genotyping will help guide future clinical work. HPV-52, HPV-16, HPV-58, and HPV-18 are likely the most common HPV genotypes in Asian countries.15 Type-specific HPV prevalence also varies in women with normal cervical cytology, precancerous cervical lesions and invasive cervical cancer in China. The HPV-related statistics were gathered from ICO/IARC were shown in Fig. 2. According to the distribution of the top 10 HPV genotypes related with cervical cancer in China, discharged by the World Health Organization (WHO)/ICO (Global HPV Data Center), we found that the most common pathogenic HR-HPV genotypes in the Chinese population are HPV-16, HPV-52, HPV-58, HPV-33, HPV-18, and HPV-31 [5].

The widespread use of the HPV vaccine has changed the extent of HPV-16 and HPV-18 infections in this population. Other HPV subtypes, such as HPV-31, HPV-33, HPV-52, and HPV-58, are more common than HPV-18 in high-grade cervical lesions. In addition, HPV-52 and HPV-58 are also commonly occurring genotypes and have a strong correlation with the occurrence and development of cervical cancer. Therefore, the extension of HR-HPV genotyping is worthy of near attention. Based on our research on the Fujian population in China, Sun et al.21 concluded that the cumulative risk of cervical lesions caused by the HR-HPV genotype infections varies in different grades of cervical lesions (low-grade cervical squamous intraepithelial lesions (LSIL), high-grade cervical squamous intraepithelial lesions (HSIL), and cervical cancer); further, the best five most common HPV infection genotypes in patients of distinctive ages are distinctive. Here we summarize concrete data from several studies to address better risk forecast and clinical management by extended HR-HPV genotyping [6].

The sensitivity of the modified strategy to detect CIN3+ lesions was the highest at 89.85%, which may be a reasonable technique for cervical cancer screening in Chinese ladies. Based on a follow-up ponder of four European randomized controlled trials.26 recommended that HPV screening can improve the prevention of invasive cervical cancer by 60%–70% compared with cytology [7]. A few vital clinical trials on

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cervical cancer screening, such as ATHENA and Kaiser Permanente trials, also proved the significance of HPV detection as a primary screening method. In 2019, the ASCCP rules approved the use of HPV genotyping for hazard assessment. A "risk-based" treatment approach is proposed through either HPV screening alone or HPV and cytology co-test.29 more frequent monitoring, colposcopy, and treatment are recommended for those with a CIN3+ hazard of more than 4.0%, as determined by previous screening and current test results. For patients at lower chance, colposcopy can be postponed and follow-up interval may be increased; when the risk is moo sufficient, they may return to routine screening [8].

Discussion

Although the effectiveness of HR-HPV genotyping detection has been proven by clinical trials, it has its impediments. The orderly evaluation of 777 cervical cancer tissues from multiple cancer registries in the United States uncovered that HPV DNA was recognized in 91% of cases; in other words, nearly 10% of cervical cancer patients are negative for HPV.56 Moreover, approximately 37% of patients with cervical adenocarcinoma worldwide are HPV-negative. Consistent with these results, a national multicentre retrospective study by Chen et al. 57 evaluating the correlation between HPV prevalence and cervical adenocarcinoma in China. The result shown that the contamination rate of HPV in cervical adenocarcinoma (n=718) was 74.5%, indicating that that classical cervical adenocarcinoma is not always associated with HR-HPV. Moreover, HR-HPV status was for the most part negative for special pathological types (minimal deviation adenocarcinoma, clear-cell adenocarcinoma, serous adenocarcinoma, endometriosis adenocarcinoma) of cervical adenocarcinoma [8, 9].

Conclusions

Cervical cancer screening strategies are changing from cytology screenings, cytology combined with HPV screenings to risk-based management strategies determined by HPV-based testing. In this way, HPV inoculation will greatly affect the performance of existing screening methods (which yield destitute comes about based on cytological and non-genotyped HPV testing), and HPV genotyping needs to be expanded and incorporated into cervical cancer screenings within the future. A few studies have shown that HPV-positivity, which only shows positive disease status, does not essentially demonstrate neurotic changes while women with the lowest risk of pathological changes should be re-examined at short intervals; this would more viably utilize health care assets, maintain a strategic distance from missed analyte or misdiagnoses, and decrease patients' mental uneasiness. This review affirms the esteem of HR-HPV testing in cervical cancer screening whereas acknowledging the confinements of HPV testing and the shortcomings of inquire about prove. In the future we should actualize further exploratory investigate, decide more precise rules for clinical activity edges, and strive to identify the signs for the application of various testing strategies for distinctive populations, especially in ranges with inadequate cervical cancer screening conditions.

References

1. Kreynina Julya (2022) Regional Hyperthermia and Chemo radiation In Advanced Cervical Cancer Patients with Different Types of Parametrical Invasion. J Med Pharm 2: 67-70.
2. Albert Singer, Ashfaq Khan (2018) Cervical cancer screening 81-100.
3. Rajamanickam Raj Kumar (2018) Introductory Chapter: Cervical Cancer - Screening, Treatment and Prevention 76-89.
4. Gary R. Newkirk (2011) Pap smear and Related Techniques for Cervical Cancer Screening 34: 56-70.
5. Ariel Gustavo Glickman, Gil-Ibanez Blanca (2022) Different techniques for sentinel lymph node detection in early cervical cancer: one-center experience 90-100.
6. David Jenkins, Chris Sherlaw-Johnson, Steve Gallivan (1996) Can papilloma virus testing be used to improve cervical cancer screening? 65: 768-773.
7. Aniruddha Chattopadhyay, Arijit Ghosh (2022) Cervical Spondylitis Myelopathy-Different Types of Surgical Techniques and Their Surgical Outcome In Terms Of Patient Recovery 10-12.
8. Keith V Nance (2013) Limitations of widely used high-risk human papillomavirus laboratory-developed testing in cervical cancer screening 75-87.
9. Abdelbaset Mohamed Elasbali, El Din Afra Hassan Saad (2012) Cervical and Oral Screening for HR-HPV types among Sudanese Women Cervical Lesions 7: 1.