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Introduction

Cervical cancer is the fourth most common harmful tumor after breast cancer, colorectal cancer, and lung cancer, threatening 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 a 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