RESEARCH ARTICLE

Prevalence of High Risk Human Papillomavirus Infection with Different Cervical Cytological Features among Women Undergoing Health Examination at the National Cancer Institute, Thailand

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Abstract

High-risk (HR) human papillomavirus (HPV) testing is important in cervical cancer screening for triage colposcopy. The objective of the study was to evaluate the prevalence of HR HPV infection with different cervical cytological features among women undergoing health examination. A total of 2,897 women were retrospectively evaluated between May 2011 to December 2011. DNA was extracted from residual specimens collected during routine liquid-based cytology tests at the National Cancer Institute. Overall, HR HPV prevalence was 9.3% including 1.6% of HPV-16 and 0.4% of HPV-18. Of all 270 HPV positive samples, 211 (78.1%) were HR-HPV non 16/18; 47 (17.4%) were HPV-16 and 12 (4.4%) were HPV-18. The prevalence of HPV infection was similar in all age groups, although a higher rate was observed in women age 31-40 years. Among women with normal cytology, HR HPV positive were found in 6.7%. In abnormal cytology, HR HPV were found 46.7% in atypical squamous cells (ASC), 54.8% in low-grade squamous intraepithelial lesions (LSIL) and 80.0% in high-grade squamous intraepithelial lesions (HSIL). HPV-16 was detected in 8.6%, 6.4% and 12.0% of ASC, LSIL and HSIL, respectively. The results of this study provide baseline information on the HPV type distribution, which may be useful for clinicians to decide who should be monitored or treated more aggressively.

Keywords: Human papillomavirus (HPV) - prevalence - cytology - Thailand

Introduction

Cervical cancer is the second leading cancer among Thai women, the incidence rate was 16.7/100,000 (Khuhaprema, 2013). Cervical cancer screening based on the Papanicolaou (Pap) smear test has been credited with a significant reduction in the incidence of this disease. For a several decades, most of hospitals in Thailand using this method for cervical cancer screening. Today, certain types of human papillomavirus (HPV) have now conclusively been shown as a necessary cause of cervical cancer (Wallboom, 1999). In addition, epidemiologic studies have shown a strong association between high-risk HPV types and the development of high-grade cervical intraepithelial neoplasias (CIN) (Kjaer, 2002; Sclert, 2001; Woodma, 2001). Alternative technologies such as liquid based cytology or human papillomavirus (HPV) screening or vaccination have been proposed as possible means to improve prevention of cervical cancer. (IARC, 2005; 2007)

According to the ASCCP (American Society for Colposcopy and Cervical Pathology) 2001 Consensus Guidelines for the Management of Women with Cervical Cytological Abnormalities (Wright, 2002), women with ASC-US should be managed using a program of two repeated cytology tests, immediate colposcopy or HPV DNA testing for high-risk HPV types. Women with ASC-H, LSIL, HSIL and atypical glandular cells should be referred for immediate colposcopy evaluation, regardless of the result of HPV testing. Therefore, detection of HR-HPV is becoming increasingly attractive as a primary screening tool.

The aim of this study is to describes the prevalence of HPV infection and to investigate the role of HPV infection in women with normal and abnormal cervical cytology.

Materials and Methods

During May to December 2011, a total of 2897 females, with a mean age of 39.0±12.00 years (range, 20-55 years), underwent cervical cancer screening for routine health check up at National Cancer Institute were