Human papillomavirus genotype distribution in New Mexico cervical cancers

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DNA from human papilloma virus type 16 (HPV16) and HPV type 18 (HPV18) were found in the majority of invasive cervical cancers in New Mexico in the 1980s and 1990s, according to a population-based study published in the March 24 online issue of the *Journal of the National Cancer Institute.*

The mean age of women diagnosed with HPV16- or HPV18-positive cancer was 5 years younger than that of women diagnosed with cancers associated with other HPV types, which may have implications for cancer screening in the future.

Large population-based studies that examine HPV genotype distribution in the United States have been lacking. Such studies are necessary to assess the impact of HPV vaccines that aim to reduce the incidence of cervical cancer due to HPV16 and HPV18.

In the current study, Cosette M. Wheeler, Ph.D., of the University of New Mexico Health Sciences Center in Albuquerque, and colleagues used the Surveillance, Epidemiology, and End Results registry to identify 1,213 cases of in situ cervical cancer diagnosed between 1985 and 1999 and 808 cases of invasive cervical cancer diagnosed between 1980 and 1999 in New Mexico. The investigators used DNA-based testing to identify the HPV genotype that was present in tumor samples. In addition, they tested 4,007 cervical Pap test specimens from women who did not have cancer for the presence of HPV DNA.

HPV16 DNA was found in 53.2 percent of invasive cervical cancers, while HPV18 DNA was found in 13.1 percent, and HPV45 DNA in 6.1 percent. In the in situ cervical cancer samples, HPV16 DNA was detected in 56.3 percent of cases, HPV31 DNA in 12.6 percent, and HPV33 DNA in 8.0 percent. The median age at diagnosis of invasive cancer positive for HPV16 and HPV18 was 48.1 and 45.9 years, respectively. By contrast, the median age at diagnosis of invasive cancer positive for other HPV genotypes was 52.3 years.

"To our knowledge, this is the largest study of this kind conducted in a U.S. population," the authors write. "This study of HPV genotypes in New Mexico provides important baseline data for evaluating the effectiveness of newly implemented HPV-based technologies, HPV vaccines, and HPV screening in the prevention of cervical cancer. Moreover, these data can guide the future application of these technologies to maximize the cost-effec¬tive, public health benefits of these interventions."

The newly approved HPV vaccine protects against infections due to HPV16 and HPV18, which are associated with an earlier cancer diagnosis than other HPV genotypes. The authors suggest, therefore, that cervical cancer screening might safely be delayed, once the vaccine is more widely used, until women reach the age of 25. This possibility is further supported by the fact that very few women under age of 25 are diagnosed with cervical cancer.

In an accompanying editorial, Lauri E. Markowitz, M.D., of the Centers for Disease Control and Prevention in Atlanta, and colleagues describe some of the challenges the scientific and public health communities face in evaluating the impact of HPV vaccines. They also discuss issues related to cervical cancer screening and changing screening guidelines for vaccinated populations.

The work by Wheeler and colleagues provides important baseline data and raises numerous issues that must be considered, according to the editorialists. They conclude that "continued work is needed to determine the best methods for monitoring vaccine impact and optimal strategies for both primary and secondary prevention of cervical cancer."

More information: Human Papillomavirus Genotype Distributions: Implications for Vaccination and Cancer Screening in the United States, J Natl Cancer Inst 2009;101: 475-487.

Source: Journal of the National Cancer Institute