HPV VACCINE COULD ALSO PREVENT OROPHARYNGEAL CANCER, SAYS IARC

Lyon, France, 18 July 2013 – A new study by the International Agency for Research on Cancer (IARC), in partnership with Costa Rican investigators and the United States National Cancer Institute (NCI), shows for the first time that the vaccine against human papillomavirus (HPV) types 16 and 18, which is used to prevent cervical cancer, also provides strong protection against oral HPV infections, known to be associated with cancer of the oropharynx and tonsils.

The Costa Rican HPV Vaccine Trial

The study, conducted in Costa Rica and published today in the journal PLOS ONE, was initially designed to evaluate the vaccine's efficacy against cervical cancer. It later included evaluation of the vaccine's efficacy at other anatomical sites, including the oral cavity, where researchers established that the vaccine reduces oral infections with HPV 16 and 18 by more than 90%.

In 2004 and 2005, a total of 7,466 healthy women aged 18–25 years received the HPV16/18 vaccine or hepatitis A vaccine as control. A total of 5,840 participants provided oral specimens, which were used to evaluate the efficacy of the vaccine against oral HPV infections. The vaccine trial showed that the HPV16/18 vaccine reduced by 93% the prevalence of oral HPV16/18 infections 4 years after vaccination.

Global burden

HPV is better known for causing cervical cancer, which is the third most common cancer in women worldwide, with an estimated 530,000 new cases and 275,000 deaths in 2008. HPV types 16 and 18 are also associated with cancers in a variety of other locations, including the vulva, vagina, penis, anus, and oropharynx. The estimated number of new cases of cancer of the oropharynx (including the tonsils and the base of the tongue) is approximately 85,000 per year in both sexes worldwide, and men are 4 times more likely than women to be affected. However, the incidence of oropharyngeal cancer has increased significantly in recent years in the USA and Europe, particularly among men and in young people.

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Potential for prevention

"The vaccine seems to provide strong protection against oral HPV infections with the viral types that cause most cancers of the oropharynx," said Dr Rolando Herrero from IARC, lead author of the study. "There are many aspects of the disease that we still don't understand, and we need more direct evidence that the vaccine prevents oropharyngeal cancer, but these results indicate that we may now have an important tool for primary prevention of these increasingly common malignancies."

Risk factors and recent incidence trends

Most oropharyngeal cancers have traditionally been linked with heavy tobacco and alcohol consumption, but 30% of oropharyngeal cancers worldwide are now thought to be related to HPV infection, which is linked to sexual practices, such as oral sex.

A recent study in the USA showed that over the past 20 years, the rate of HPV detection in oropharyngeal tumour specimens increased from 16% to 70%, leading that study's authors to postulate that in the next few decades in the USA there may be more cases of HPV-related oropharyngeal cancer than HPV-related cervical cancer.

"The results of our study demonstrated protection against oral HPV infection in women. If similar results are observed in men, vaccination of boys may become an important public health measure in areas where oropharyngeal and other HPV-related cancers are relatively common in men," added Dr Herrero.

Prevention

Last month, another IARC study in partnership with NCI showed that antibodies to HPV16 could help detect oropharyngeal cancer several years before the clinical onset of the disease. Dr Christopher Wild, Director of IARC, concluded that "both these results show an exciting area of research that will hopefully lend itself to public health action and help reduce the burden of HPV-induced cancers in the medium term."

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International Agency for Research on Cancer; World Health Organization. HPV vaccine could also prevent oropharyngeal cancer, says IARC [Internet]. Lyon: IARC; 2013 [cited 2013 Sep 25]. Available from: http://www.iarc.fr/en/media-centre/pr/2013/pdfs/pr220_E.pdf.