

COMMENTARY

Cost and Financing Issues Limit Access to the HPV Vaccine

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Abstract

Cervical cancer is a leading cause of death from cancer among women in low-resource settings, affecting women at a time of life when they are critical to social and economic stability. Every year, about 500,000 women worldwide are diagnosed with cervical cancer and more than 250,000 die from the disease. It is the leading cancer in women in half the countries of the world and mostly affects relatively young poor women. But the vaccine cost is too high. With the availability of cost-effective, safe vaccine, there is real hope for reducing the global burden of cervical cancer.

Keywords: HPV vaccine - cervical cancer - socio-economic global burden - cost issues

Asian Pacific J Cancer Prev, 11, 573-574

Introduction

Cervical cancer is a leading cause of death from cancer among women in low-resource settings, affecting women at a time of life when they are critical to social and economic stability (Goldie et al., 2005). Human papilloma virus (HPV) is responsible for cervical cancer infection. HPV is one of the most common sexually transmitted infections; 30% of females are infected within two years of becoming sexually active. While most HPV infections show no clinical symptoms, persistent infection with a high-risk HPV type causes almost all cervical cancers. High-risk HPVs also cause other, less common, non-cervical cancers. Two low-risk HPV types (6 and 11) cause approximately 90% of anogenital warts. Other factors can impact on the risk of cervical cancer through increasing the risk of HPV infection and/or increasing the risk of progression to cervical cancer. They include smoking, sexual activity at a young age, number of sexual partners, oral contraceptives and socio-economic factors (2).

Global Burden of Cervical Cancer

Cervical cancer is the second most common type of cancer worldwide. Every year, about 500,000 women worldwide are diagnosed with cervical cancer and more than 250,000 die from the disease. It is the leading cancer in women in half the countries of the world and mostly affects relatively young poor women. About 80% of cervical cancer deaths occur in developing countries. "Recent estimates indicate that if trends continue the way they are, developing countries will face a 75% increase in the number of cervical cancer cases because of growth and aging of the population in the next two decades (<http://www.ecancermedicalscience.com/cache/pdf/news-272.pdf>). Data on the incidence of invasive cervical cancer

and related mortality rates delineated by ethnic group within the United States highlight the disparate nature of this cancer. The cumulative, age adjusted incidence ratio of invasive cervical cancer is 8.7 per 100,000 US women. The rate of invasive cervical cancer in African American and Hispanic populations is significantly higher than the national average, at 11.4 and 13.8 per 100,000 women, respectively. Conversely, American Indian/Alaskan Native women have a lower than average incidence rate of 6.6 per 100,000 women. The incidence rates for whites and Asian/Pacific Islanders approach the cumulative average, at 8.5 and 8.0 per 100,000 women, respectively (Sith, 2008). The deaths of women who are in their most productive years have a devastating effect on the well-being of their families, resulting, for example, in decreases in school attendance and nutritional status among their children (Agosti and Goldie, 2007).

HPV vaccines

In June 2006, the United States Food and Drug Administration (FDA) approved Gardasil, Merck's HPV vaccine, for sales and marketing to girls and women ages 9 to 26. The vaccine is currently approved for sale in 85 countries. Another HPV vaccine produced by Glaxo-Smith Kline, Cervarix, has been approved in the European Union, Australia, and Kenya, with applications pending elsewhere (Agosti and Goldie, 2007). According to the researchers, the vaccine was 89% effective in preventing infection with HPV types 16 and 18, and 100% effective in preventing the diseases associated with these types (Greenwell and Rughooputh, 2005).

The vaccine is most effective if administered in pre-adolescence prior to sexual activity. The vaccine is administered in 3 doses at 0, 2, and 6 month intervals. Although, the vaccine has been shown to be effective for

up to five years (Olsson et al., 2007). The U.S. Centers for Disease Control and Prevention (CDC) recommend that girls ages 11 and 12 receive the HPV vaccine. Both Cervarix and Gardasil have been proven at least 95% effective in preventing infection with HPV types 16 and 18, when administered prior to sexual debut. These two types of HPV are responsible for about 70% of cervical cancer deaths (Agosti and Goldie, 2007).

Cost and Financing Issues

Merck has announced a private-sector price of US\$ 120 per dose in the United States (U.S.) for Gardasil® and similar or higher prices in other industrialized countries. Even with a discount for the public sector, the HPV vaccine is the most expensive offered through the U.S. Centers for Disease Control and Prevention's Vaccines for Children Program. GSK's Cervarix® is also expensive and GSK has matched Merck's price in some countries. In the United Kingdom the private prescription price of both vaccines is £ 240 (US\$ 490) for the three-dose series. In developing countries, where the majority of those who would benefit from HPV vaccination reside, prices of above US\$ 100 per dose would make the vaccine too expensive for virtually all governments to purchase and would put it out of reach of all but the wealthiest families (International AIDS Vaccine Initiative, 2007).

A survey done last December 2008 and January 2009 by the Obstetrical and Gynaecological Society of Singapore (OGSS) showed that women here were not getting vaccinated because of the high cost of the vaccines and their ignorance about the disease and there is currently no source of public funding for vaccines for uninsured adults age 21 and older (Dawn, 2009).

How to Overcome

Convincing finance and health ministries of the vaccine's programmatic feasibility, financial sustainability, and value relative to competing demands for resources. Country-level cost-effectiveness studies need to be supported and disseminated widely, making an effective case that HPV vaccination can be a wise investment even though the benefits accrue well into the future. Ensuring considerable assistance to low-income countries from 'The Global Alliance for Vaccines and Immunization' or other sources to finance.

Assuring manufacturers that demand will materialize and financing is secured so that they will scale up production to meet developing country needs. Signaling to manufacturers that it is worthwhile to invest in improved second-generation HPV vaccines which, over the longer run, could contribute substantially to increasing coverage of HPV immunization in developing countries. Second-generation vaccines could be superior to the existing ones on a number of dimensions, including price, efficacy, and ease of delivery.

Conclusion

HPV vaccines could greatly reduce cervical cancer

morbidity and mortality in developing countries. Delivering HPV vaccines will be challenging in developing countries, especially where health infrastructure is weak. Financial obstacles are another blockade given that HPV vaccines, like most new vaccines, will be expensive compared to the traditional childhood vaccines widely utilized in low- and middle-income countries.

Determining the price that manufacturers will charge in developing countries, which will greatly influence the cost effectiveness of HPV vaccination in these countries as well as the affordability of HPV vaccine purchase and delivery. Too many women living in poverty have died of invasive cervical cancer. With the availability of cost-effective, safe vaccine, there is real hope for reducing the global burden of cervical cancer.

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