

## EDITORIAL

# HPV Vaccine and Prevention of Cervical Cancer in Africa

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Available evidence indicates that cervical cancer is the second or third most common cancer in women, after breast and colorectal cancer. Each year, about 500,000 new cases of cervical cancer are diagnosed all over the world, with an estimated 80% or more occurring in developing countries. In high income countries, the availability of Pap smear and treatment has drastically reduced the incidence of cervical cancer. By contrast, up to 80% of the estimated 280,000 annual deaths from cervical cancer worldwide occur in developing countries. In these countries, about 95% of women will never have Pap smear or related prevention and treatment options in their lifetime.

Sub-Saharan Africa has by far the highest burden and mortality associated with cervical cancer in the world. A total of 5318 new cases of cervical cancer were detected in South Africa in 1997, while the risk of development of cervical cancer in South African women has been estimated to be 1 in 29<sup>1</sup>. In Nigeria, the estimated incidence rate of cervical cancer is 25 per 100,000 women; with an estimated 8000 new cases of cervical cancer diagnosed in the country each year<sup>2</sup>. Equally high rates of cervical cancer have been reported from several African countries including Uganda, Malawi, Ethiopia and Kenya. Recent data from the World Health Organization indicate that while a woman in the United States has a 70% chance of surviving cervical cancer, that chance is reduced to 58% in Thailand, to 42% in India, and to only 21% in sub-Saharan Africa<sup>3</sup>.

By contrast to the high burden and mortality associated with cervical cancer in Africa, very few primary and secondary prevention initiatives are currently available to curtail the disease in Africa. To date, cervical cancer screening and Pap smear that have significantly reduced the rates of cervical cancer in high and middle income countries are still very poorly applied in Africa. Part of the low acceptance of secondary prevention services for cervical cancer in Africa include the lack of awareness of cervical cancer and the role of screening, inappropriate health seeking behaviour by women, poor organization of health services and the low priority accorded to women's health by policymakers.

However, the good news is the increasing evidence now available in the literature which indicates that a vaccine directed against the human papillomavirus (causative agent of cervical cancer) can reduce the incidence of cervical pre-lesions that lead to cervical cancer. In October 2005, Merck & Co., Inc. announced the results of its phase III trial on its vaccine, GARDASIL<sup>TM4,5</sup>. The study which enrolled over 12 000 women in 13 countries, demonstrated the nearly 100% prevention of non-invasive cervical cancers in women who received the vaccine. Similarly, GlaxoSmithKline's Cervarix<sup>TM</sup> is undergoing Phase III trials, and has so far produced impressive reports. While Gardasil<sup>RM</sup> is now licensed in more than 45 countries for use in 9 to 26 year old girls, GSK's candidate HPV vaccine has not yet been licensed in any country. Nevertheless, both vaccines hold exciting new promise for the development of highly effective primary prevention strategies for cervical cancer.

There can be no doubt that the HPV vaccine will be extremely relevant for many African countries (since women have limited access to pap smear), but many questions need to be answered to clarify its usefulness and potential effects in Africa. In the first place, the HPV vaccine was developed against HPV 16 and HPV 18 sero-types, the two most frequent causes of cervical cancer. However, it is not known whether the vaccine has equal efficacy against cervical cancer due to other sub-types of HPV. Thus, each country needs to identify the HPV sero-type most prevalent in its territory in order to determine the effective and relative effectiveness of the available HPV candidate vaccines.

Secondly, it is not yet clear whether the advent of the vaccine would obviate the need for secondary prevention of cervical cancer using pap smear and other screening procedures. To date, these secondary prevention measures have been slow to scale up in many African countries, and it is possible that the introduction of the HPV vaccine will further subsume these secondary efforts. However, in view of the

increasing use of cheaper and more cost-effective methods such as visual inspection of the cervix, it is evident that secondary prevention methods will continue to be promoted in many African countries.

A third problem with the use of the HPV vaccine is the high cost of the vaccine. African countries, confronted by several contending health problems may feel unable to afford the current high cost of the vaccines. Thus, special considerations need to be put in place to ensure that the vaccine is made affordable and accessible to African women. In particular, pharmaceutical companies need to develop a special pricing mechanism for poor countries; and donor agencies ought to recognize the importance of this vaccine for the promotion of women's health in Africa, and therefore provide substantive support for African women. Clearly, pricing is an important issue that needs to be considered as the controversies surrounding the emergence of the vaccine are being resolved.

In sum, there can be no doubt that African countries need to embrace the new vaccines for the prevention of cervical cancer. Experience has shown that new vaccines have taken up to 30 years to gain grounds in African countries, mainly because of paucity of the relevant information. To date, several lifesaving vaccines including the polio vaccines are still poorly accepted in some parts of Africa. To avert this scenario for HPV vaccines, African countries must begin to develop strategies for the introduction of the vaccines in their territories.

In this respect, it is noteworthy that a global call to stop cervical cancer was recently launched<sup>6</sup> in London, UK, which called on governments to prioritize cervical cancer in their national development and health programs. Following this, the Princess Nikky Foundation, an NGO in Nigeria organized a highly successful conference in Abuja, Nigeria<sup>7</sup> in July 2007, involving several participants from all of Africa, where information was provided on cervical cancer and the new initiatives, such as the HPV vaccines necessary to reduce the disease burden. These kinds of initiatives are extremely necessary to generate awareness of cervical cancer in Africa and the benefits of primary and secondary prevention interventions to reduce the disease incidence. We believe that African countries can take appropriate steps to promote the use of HPV candidate vaccines and initiate cervical screening procedures to prevent cervical cancer in the next generation of women.

## References

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