A promising future for cervical cancer vaccine
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A vaccine against cervical cancer is on the horizon and a new study published in The Journal of the American Medical Association set out to determine what role it may play in the future. The vaccine will target certain types of the human papillomavirus (HPV), the most common cause of cervical cancer.

Researchers at Duke University Medical Center in North Carolina used a mathematical analysis called a Markov model to try to determine the benefit of vaccinating women against HPV. The model took into account the cost of the vaccine, estimated life expectancy of the women to be vaccinated, as well as the known benefits of current screening tools. The researchers concluded that an HPV vaccine in combination with established screening tools could be cost-effective health intervention, especially if vaccination and annual screening begins at the age of eighteen.

Infection with human papillomavirus can cause cervical dysplasia, or abnormal cell changes. These changes can lead to cancer, but it is usually a slow process, making screening very effective in the prevention of potential cancers.

"HPV has now been found in the majority of cervical cancer cases, at least ninety percent," according to Shalini Kulasingam, Ph.D., one of the lead researchers from Duke University. By adding a vaccine that targets the leading cause of cancer to established screening methods, scientists are hoping to lower the number of cervical cancer cases even further.

Cervical cancer is not as common as it used to be. According to data from the American Cancer Society, the number of cancer deaths declined almost seventy five percent between 1955 and 1992. The death rate continues to drop by roughly two percent each year. These changes are primarily due to the Pap smear, a screening tool that allows doctors to detect precancerous changes in cells of the cervix.

There are at least fifteen different types of HPV, but the majority of cervical cancer cases are caused by a subset known as HPV 16 and 18. “Initial vaccines will only have one or a few HPV types, which will potentially reduce a large proportion but not all cervical pre-cancer and cancer,” Kulasingam said. The vaccine is currently in clinical trials and may not be commercially available for a while.

Although the promise of an effective vaccine is exciting, Kulasingam cautions women to continue following recommended guidelines. More research is needed before widespread implementation of a vaccination program can begin. “We have many questions that still need to be answered and conclusive evidence on the effectiveness of such a vaccine may not be available for some time,” she added. “The important thing is that women will need to continue to be screened.”

The American Cancer Society recommends yearly screening for all women about three years after they begin having intercourse, but no later than the age of twenty one. Recently, a new screening tool--the HPV (human papilloma virus) with Pap test—has become available. This diagnostic tool is *almost* 100% effective in detecting HPV, and it is almost twice as sensitive as conventional Pap tests.

Current cervical cancer screening recommendations will likely remain in place for now. "Changes would affect future generations, but not necessarily current or the next few generations of women," Kulasingam said.

Sources

American Cancer Society, fact sheets, 2003.

Kulasingam S, Myers E. Potential Health and Economic Impact of Adding Human Papillomavirus Vaccine to Screening Programs. *JAMA.* 2003;290:781-789.