Meta-Analysis Shows Importance of HPV Vaccines

By **Leah Lawrence**

July 2, 2019

Cervical Cancer, Gynecologic Cancers, News

Significant reductions in several strains of human papillomavirus (HPV) and HPV-associated diseases have occurred in the up to 8 years of follow-up since implementation of the girls-only HPV vaccination, according to results of a meta-analysis published in *Lancet Oncology.*

The review and meta-analysis included data from 65 articles from 14 high-income countries (most of which had girls/women-only programs), encompassing follow-up data from more than 60 million individuals over 8 years.

During that time, the prevalence of HPV 16 and 18 decreased by 83% among girls age 13 to 19 years old, and by 66% among women age 20 to 24 years. In addition, cross protection occurred, with the prevalence of HPV 31, 33, and 45 decreasing by 54% among girls age 13 to 19 years.

There was also evidence of herd protection from the vaccine. Specifically, anogenital warts decreased by 67% among girls age 15 to 19 and by 54% among women age 20 to 24, but also by 31% among women age 25 to 29, 48% among boys age 15 to 19, and 32% in men age 20 to 24.

“Our results provide strong evidence of HPV vaccination working to prevent cervical cancer in real-world settings, as both the cause (high-risk HPV infection) and proximal disease endpoint (CIN2+) are significantly declining,” wrote Mélanie Drolet, PhD, of Laval University in Quebec, and colleagues from the HPV Vaccination Impact Study Group. “In terms of global policy implications, these results reinforce the recently revised position of WHO recommending HPV vaccination of multiple age cohorts of girls, and provide promising early signs that the WHO call for action on cervical cancer elimination might be possible if sufficient population-level vaccination coverage can be reached.”

After a period of 5 to 9 years of vaccination, the rate of CIN2+ decreased by more than half (51%) among screened girls age 15 to 19 years and by about one-third (31%) among women age 20 to 24.

In an editorial that accompanied the article, Silvia de Sanjosé, PhD, of PATH in Seattle, and Sinead Delany-Moretlwe, MBBCh, PhD, of Wits Reproductive Health and HIV Institute in South Africa, pointed out that one limitation of the study is its lack of inclusion of data from low- and middle-income countries, “where the burden of disease accounts for over 80% of deaths attributable to HPV-related cancer.”

However, collection of these data in low- and middle-income countries would be challenging due to a lack of surveillance system to link vaccinations with outcome data. In addition, vaccine cost and inadequate supply may slow the process of vaccine introduction to these countries.

“For the next 5 years, vaccine supplies are projected to be constrained and unable to accommodate demand because of fewer requirements to introduce HPV vaccines in countries supported by Gavi, the Vaccine Alliance, increased interest in multiple age-cohort vaccination, and introduction of a gender-neutral approach,” they wrote. “The scale-up of HPV vaccine introduction in low- and middle-income countries will be particularly affected by these constraints.”

Data from studies like this meta-analysis can help implementers to concentrate on high-priority targets.

“The data presented by Drolet and colleagues emphasize the importance of redoubling our efforts to tackle the fiscal, supply, and programmatic barriers that currently limit HPV vaccine programs; with these efforts, HPV vaccination could become a hallmark investment of cancer prevention in the 21st century,” they concluded.

Related Articles

Cost Effectiveness of CAR T-Cell Therapy Depends on Long-Term Outcomes

Christina Bennett, MS *24 June 2019*

Use of Metformin Disappoints in DLBCL, Follicular Lymphoma

Leah Lawrence *25 June 2019*

Are Physicians Ethically Obliged to Prescribe Lifestyle Changes?

Erin Kayata *27 June 2019*