

# Coadministration of a 9-Valent Human Papillomavirus Vaccine With Meningococcal and Tdap Vaccines.

Andrea Schilling, Mercedes Macias Parra, Maricruz Gutierrez, Jaime Restrepo, Santiago Ucros, Teobaldo Herrera, Eli Engel, Luis Huicho, Marcia Shew, Roger Maansson, Nicole Caldwell, Alain Luxembourg, Ajoke Sobanjo ter Meulen.

## Abstract

**BACKGROUND:** This study in 11- to 15-year-old boys and girls compared the immunogenicity and safety of GARDASIL 9 (9-valent human papillomavirus [9vHPV] vaccine) administered either concomitantly or nonconcomitantly with 2 vaccines routinely administered in this age group (Menactra [MCV4; *Neisseria meningitidis* serotypes A/C/Y/W-135] or Adacel [Tdap; diphtheria/tetanus/acellular pertussis]).

**METHODS:** Participants received 9vHPV vaccine at day 1 and months 2 and 6; the concomitant group ( $n = 621$ ) received MCV4/Tdap concomitantly with 9vHPV vaccine at day 1; the nonconcomitant group ( $n = 620$ ) received MCV4/Tdap at month 1. Antibodies to HPV-, MCV4-, and Tdap-relevant antigens were determined. Injection-site and systemic adverse events (AEs) were monitored for 15 days after any vaccination; serious AEs were monitored throughout the study.

**RESULTS:** The geometric mean titers for all HPV types in 9vHPV vaccine 4 weeks after dose 3, proportion of subjects with a fourfold rise or greater in titers for 4 *N meningitidis* serotypes 4 weeks after injection with MCV4, proportion of subjects with antibody titers to diphtheria and tetanus  $\geq 0.1$  IU/mL, and geometric mean titers for pertussis antigens 4 weeks after injection with Tdap were all noninferior in the concomitant group compared with the nonconcomitant group. Injection-site swelling occurred more frequently in the concomitant group. There were no vaccine-related serious AEs.

**CONCLUSIONS:** Concomitant administration of 9vHPV vaccine with MCV4/Tdap was generally well tolerated and did not interfere with the antibody response to any of these vaccines. This strategy would minimize the number of visits required to deliver each vaccine individually.