Nonvaccine Strains of HPV Common in Teen Girls

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NEW ORLEANS — Infections with genotypes not contained in the newly approved human papillomavirus vaccine are common among adolescent girls positive for the virus, Dr. Roshan George said at the Southern regional meeting of the American Federation for Medical Research.

She presented results from the first 32 patients, aged 16-18 years, in an ongoing genotype study of adolescents with atypical squamous cells of undetermined significance and human papillomavirus (HPV) infection. None of the girls had been immunized with the new vaccine containing HPV genotypes 6, 11, 16, and 18 (Gardasil).

Genotype results available from 29 of the 32 girls identified 53 isolates, of which 38% were vaccine genotypes and 62% were nonvaccine genotypes.

Sixteen girls (55%) were infected with more than one genotype, seven (24%) with more than two genotypes, and two girls (7%) were infected with four genotypes, said Dr. George, a pediatrician with Louisiana State University Health Sciences Center in Shreveport. Just 17% of girls were infected only with genotypes covered by the vaccine, 38% were infected with the vaccine genotypes plus other types, and 45% were infected only with genotypes not covered by the vaccine.

"[These data support] recommendations that cervical screening should be continued even in females receiving the vaccine," Dr. George said.

Epidemiology studies have shown an HPV prevalence rate of 25%-40% in young women. Adolescents acquire HPV rapidly after sexual initiation, and often have concomitant sexually transmitted diseases.

"I was definitely not surprised that almost 55% had a concomitant STD, but I was surprised to see that 50% were pregnant, two had four genotypes, and 45% were not covered by vaccine strains," Dr. George said in an interview. "That's why it's important we keep screening."

Dr. George recommends that HPV genotyping, which is not federally approved for this application, should be performed only in those patients with abnormal cytology or carcinoma in situ on their routine Pap test.

These data suggest cervical screening should be continued even in girls and women receiving the vaccine.

DR. GEORGE

The investigators extracted DNA from ThinPrep liquid Pap smear specimens taken from the patients and used polymerase chain reaction to amplify HPV targets overnight before using xMAP (Luminex) bead-based assay technology to detect the DNA. The reagent beads or microspheres are embedded with HPV probes that are color coded into subsets specific for 1 of 19 HPV genotypes. Thus, each of the 19 probes is associated with a microsphere of a specific dye color and will bind to its complementary target DNA.

High-risk HPV genotypes 16 and 18, which cause 70% of cervical cancers, were found in 19% and 5.6% of isolates. Low-risk types 6 and 11, which can cause genital warts and lead to low-grade dysplasia, were found in 5.6% and 7.6% of isolates. HPV genotypes 57, 45, 31, 35, and 58 were also found in roughly 7.5% of isolates. No detectable genotype was found in two specimens, and one patient had a low-risk type not detected by the assay, the investigators reported.

The study was funded by the Digene Corp., which markets the reagents used in the study. ■

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