Zoster Risk Declined in Young Varicella Vaccinees

BY BRUCE JANCIN

VAIL, COLO. — The risk of herpes zoster in children under age 10 years who've been vaccinated against varicella was 4- to 12-fold less than in those with naturally acquired varicella in a large population-based study.

Moreover, when herpes zoster did occur, the pain was significantly less if the eruption was caused by the vaccine strain varicella zoster virus (VZV). This has previously been anecdotally reported, but the new study by the Los Angeles County Department of Public Health and the Centers for Disease Control and Prevention provides the first actual proof that herpes zoster in varicella vaccinees is a generally benign disease, Dr. Myron J. Levin said at a conference on pediatric infectious diseases sponsored by the Children's Hospital, Denver.

The study was conducted during 2000-2006 in Antelope Valley, Calif., a long-time CDC active surveillance site. During the study period, the incidence of herpes zoster among children less than 10 years old declined by 55%, from 74.8 cases per 100,000 in 2000 to 33.3 per 100,000 in 2006.

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DR. LEVIN

In contrast, the incidence jumped by 63% among 10- to 19-year-olds, from 59.5 to 96.7 cases per 100,000. The investigators said they couldn't explain this increase and would like to see it confirmed in other data sets in order to be confident the phenomenon is real (Pediatr. Infect. Dis. J. 2009; 28:954-9).

One possible explanation for the increase over time in the older youths is waning VZV immunity, with resultant reactivation of the latent vaccine strain of the virus, according to Dr. Levin, professor of pediatrics and medicine at the University of Colorado at Denver.

Another possibility—and one he favors—is that the varicella vaccine is a suboptimal immunogen. Although the vaccine's primary failure rate is 4%-5%, as with other vaccines, the fact is that the boost in immunogenicity to varicella antigen following a first dose of the MMR vaccine is markedly less than the resultant immunogenicity boost to the measles, mumps, and rubella antigens. That's the basis for the two-dose strategy recommended by the CDC Advisory Committee on Immunization Practices in 2007.

The second vaccine dose boosts antibody to levels similar to those seen in adults after varicella. But boosted immunity will wane, and only time will tell how varicella vaccination will affect the incidence of herpes zoster. "We are in the midst of a very large clinical experiment," Dr. Levin said of the two-dose strategy.

It makes sense that herpes zoster in VZV vaccine recipients should be less frequent and less severe than in naturally infected individuals because the vaccine virus is attenuated. Plus, the latent VZV that causes herpes zoster comes from skin lesions—and skin lesions are rare following vaccination of normal individuals. Dr. Levin disclosed that he is a consultant to, is on the speakers bureau for, and receives royalties from Merck & Co. ■

Zoster Vaccine Could Have Off-Label Use, Expert Says

BY BRUCE JANCIN

VAIL, COLO. — Giving herpes zoster vaccine to children who are immunocompromised, or are about to become so, is an off-label use that is nonetheless worthy of strong consideration in selected cases.

That's the view of vaccine expert Dr. Myron J. Levin, who notes that herpes zoster in immunocompromised children tends to be extremely severe. "It makes sense to give the vaccine to children who've had chicken pox and are going to have a transplant. Maybe you can protect them from zoster down the road by giving them the zoster vaccine up front. It's a new thought," he said at a conference on pediatric infectious diseases sponsored by the Children's Hospital, Denver.

As for children who are already immunocompromised, it is important to look for safe opportunities in which to administer the herpes zoster (HZ) vaccine, which contains 14-fold higher titers of varicella zoster virus than the childhood varicella vaccine.

"It's probably going to be safe wherever it's safe to give the varicella vaccine to immunocompromised kids. That's where I would start. The reason I can say that is because they already have some preexisting immunity. You're not giving this vaccine to a naive person, you're giving it to someone who has a history of varicella. So it's unlikely they're going to have serious side effects unless they're very, very immunocompromised," explained Dr. Levin, professor of pediatrics and medicine at the University of Colorado at Denver. Thus, HZ vaccination is to be avoided in situations of severe immune compromise because it could result in a fulminant case of zoster.

In contrast, circumstances in which giving varicella vaccine—and, by extension, HZ vaccine—appears to be safe and beneficial include HIV-infected patients with more than 15% CD4 cells, particularly if highly active antiretroviral therapy is on board; recipients of a solid organ transplant 6 months or more before without complications or need for rejection therapy; lymphoma patients who successfully completed treatment at least 3 months earlier; and individuals who are 18-24 months post stem-cell transplant with no rejection episodes or other problems, who have good cell counts, and who are off immunosuppressive therapy, according to Dr. Levin. The HZ vaccine is licensed for immunocompetent individuals aged 60 years and older. It is now in large clinical trials looking at enlarging the recipient pool to include 50- to 59-year-olds.

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