



IMMUNIZATION UPDATES

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During the past year, I've reported in the Family Practice Family Newsletter about multiple changes in recommendations for immunizations. This article will summarize the most noteworthy changes.

HUMAN PAPILLOMA VIRUS

Gardasil,TM a quadrivalent HPV recombinant vaccine, is now approved for prevention of infection with HPV types 6, 11, 16, and 18 in females ages 9 to 26. Given as a series of 3 doses, with follow-up doses 2 and 6 months after the first injection, it is effective in *preventing* both cervical cancer and genital warts due to the viral strains found in the vaccine, but it is not a treatment. However, it can be given even if the patient is already HPV positive or has a pap smear consistent with HPV infection, as it can potentially prevent infection with other strains that the patient hasn't yet contacted. This is truly a revolutionary vaccine and we should be spreading the word to those in the appropriate age groups and their parents. The complete recommendations of the American College of Gynecology are available on their website only to subscribers, but CDC recommendations for use of the vaccine are available at www.cdc.gov/nip/recs/provisional_rec/hpv.pdf.

MENINGOCOCCAL CONJUGATE VACCINE

(MCV 4) – MenactraTM —Although data are still being collected about reports of Guillain-Barré Syndrome within six weeks of receiving Menactra,TM both the CDC and the Advisory Committee on Immunization Practices (ACIP) continue to recommend vaccination for adolescents, college freshmen in dormitories, and other populations at increased risk. The CDC does recommend, however, that persons with a history of Guillain-Barré should not receive the vaccine. It now appears there will also be enough vaccine for adolescents starting at age 11 up to and including college freshmen entering dormitories who have not previously been vaccinated. Unfortunately, there is still no type B component in any meningococcal vaccine, which will probably be the next major breakthrough for this vaccination.

ZOSTER VACCINE

ZostavaxTM —This is a live vaccine which the ACIP voted to recommend for adults 60 years of age and older to help prevent Herpes Zoster (shingles), a frequently painful disease marked by a blistering rash. Studies have shown that its effectiveness in preventing shingles decreases with advancing age: it is 64% effective in those between ages 60 and 69, 41% between ages 70 and 79, and only 18% after age 80. For prevention of post-herpetic neuralgia, an article in the *New England Journal of Medicine* (June 2, 2005) reports that ZostavaxTM is only 5% effective in the age group 60-69, and its effectiveness rises to 50-55% between 70-79 years, but drops again to 26% after age 80. Because it's a live, attenuated vaccine, it may result in a more extensive vaccine-associated rash or possibly cause disseminated disease in immunocompromised individuals.

HEPATITIS A VACCINATION

Hepatitis A vaccine is now recommended for all children ages 12-23 months. The 2 doses in the series should be given at least 6 months apart. Obviously there are a great many children and adults who have missed this vaccine. For those who require both hepatitis A and B vaccines, a preparation called Twinrix[®] that contains both is available. Twinrix[®] requires a three dose schedule, and recipients must be at least 18 years or older. Hepatitis A is recommended for persons who travel or work anywhere except the United States, Western Europe, New Zealand, Australia, Canada and Japan. Those with chronic liver disease, including persons with hepatitis B and C, are also candidates for the vaccine. Drug users, both injecting and non-injecting, men who have sexual relations with men, and people with clotting-factor disorders, should also be offered the hepatitis A vaccine.

VARICELLA VACCINE – SECOND DOSE.

As a result of outbreaks of varicella among school children who had received a single dose of vaccine, the ACIP recently recommended that children under 13 years of age should receive a routine second dose. The first dose

of varicella vaccine is normally given at 12-15 months of age, and it should now be followed by a second dose at age 4-6 years. This appears to be more than 3× as effective in preventing disease than one dose. The ACIP also now recommends that children, adolescents, and adults who have previously received only a single dose of the vaccine should receive a “catch-up” dose (at least three months after the first dose in children under 13 years of age), and that all unvaccinated people 13 years of age or older without a history of varicella or evidence of immunity, should be vaccinated with 2 doses of vaccine given 4-8 weeks apart.

There is now a combination measles-mumps-rubella-varicella vaccine called ProQuad®, so if the patient needs a booster for measles-mumps-rubella and varicella, this vaccine saves one injection. The present 2-dose varicella vaccination schedule now coincides with the MMR series. The following are considered evidence of varicella immunity: 2 doses of varicella vaccine in school-aged children, adolescents, and adults; laboratory evidence of varicella infection; a history of varicella or herpes zoster infection; and birth in the United States before 1980. However, for those in the healthcare profession or those who are pregnant, birth in the United States before 1980 is not sufficient evidence of immunity. Therefore, a pregnant patient who was born in the United States before 1980 and has not met the other criteria listed above, should be vaccinated immediately postpartum.

MUMPS

On May 17th, 2006 the ACIP issued updated criteria for evidence of mumps immunity: two doses of mumps virus vaccine for school-age children and high-risk adults. The updated recommendation for susceptible healthcare workers is two doses of mumps vaccine. During outbreaks, two doses are also recommended for children ages 1-4 years and low risk adults.

TETANUS, DIPHTHERIA, PERTUSSIS VACCINE

Hopefully by now everyone has heard of Adacel™, the Tdap vaccine (tetanus, diphtheria, acellular pertussis) for adults. In June of 2006 the ACIP voted to recommend one dose of Tdap vaccine postpartum before hospital discharge for women who have not previously received Tdap and who have received the last dose of the Td vaccine two or more years before delivery. Tdap is also recommended at age 11 or 12 for adolescents who have completed the recommended DTP/DTaP childhood

vaccination series but have not yet received a Td booster dose. This Tdap vaccine can be received once up to 65. It is, of course, extremely important to offer to those adults that have infants in the household or those infants that are seen frequently, for example by grandparents, who themselves have never received the Tdap vaccine (and are thus potential carriers of pertussis to the unimmunized or under-immunized infant grandchild). It may be given to those that are high risk (such as those categories mentioned) as early as two years after their last Td booster dose. This is particularly important for those in the health professions. We see cases of pertussis in Lancaster County every year.

ROTAVIRUS

The ACIP recently recommended that all infants receive rotavirus vaccine at 2, 4, and 6 months of age. Unfortunately, the vaccination series must begin before 12 weeks of age or it cannot be given at all. Further, all three doses must be given by 32 weeks of age. RotaShield® was removed from the market in 1999 after it was found to be associated with a risk of intussusception. RotaTeq® differs significantly from the original vaccine, and is derived from bovine and human rotavirus rather than Rhesus monkeys. The safety of RotaTeq® was tested in one of the largest clinical trials ever funded by a corporate manufacturer, and it was shown not to increase the risk of intussusception. Every year in the United States there are 20-60 deaths of infants from rotavirus infection, compared with a half million or more deaths in children who live in developing countries. Thanks to effective immunization, most rotavirus infections in the U.S. cause morbidity, not mortality, as RotaTeq® prevents 96-98% of the expected hospitalizations and deaths. This effectiveness is not only helpful to the infant, but it also decreases the overall societal cost (including direct hospital fees and the indirect costs of lost wages).

VARIZIG™ (HUMAN VARICELLA ZOSTER IMMUNE GLOBULIN)

This product is used for prophylaxis after exposure to varicella. The United States manufacturer of varicella zoster immune globulin (VZIG) recently discontinued its production, but the Canadian formulation, VariZIG™, is now available in the United States under an investigational new drug application expanded access protocol. VariZIG™ is recommended for prophylaxis in persons at high risk of severe varicella who are exposed to varicella

or herpes zoster and have contraindications to use of a varicella vaccine. For healthy adults and others with no contraindications, varicella vaccine, which provides long-lasting protection, is preferred. FFF Enterprise is

the sole authorized US distributor of VariZIG™. Their 24 hour telephone number is 1-800-843-7477, and after review of a request, they can deliver VariZIG within 24 hours of a request.

REFERENCES

This is a brief synopsis of some of the changes that have occurred in the last year in the immunization realm. Websites with reliable information about vaccines include:

1. www.cdc.gov/nip – The Centers for Disease Control and Prevention; National Immunization Program;

2. www.vaccine.chop.edu – The vaccine education center at the Children’s Hospital in Philadelphia;

3. www.cispimmunize.org – The American Academy of Pediatrics.

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