

Infants Benefit From Maternal Flu Vaccination

BY BETSY BATES

When women receive an influenza vaccine during pregnancy, their babies benefit, according to a series of studies presented at the annual meeting of the Infectious Diseases Society of America in Philadelphia.

Three separate studies highlighted during a press conference all reached the same conclusion: that maternal vaccination enhances the well-being of newborns and infants when pregnancies coincide with influenza season.

The “Mother’s Gift Study,” led by Dr. Mark C. Steinhoff of Cincinnati Children’s Hospital Medical Center tracked birth weights of infants born to 340 Bangladeshi mothers who were randomized to receive inactivated trivalent influenza (study group) or pneumococcal 23v vaccine (control) during the third trimester of pregnancy. The efficacy of vaccination was determined by comparing flulike respiratory illnesses with fever in the two groups over time, as the spread of the influenza virus waxed and waned.

During late 2004 and early 2005, little difference was seen in flulike illnesses between the two groups. But during a peak period of flu infection—February 2005 to November 2005—there was a 49% reduction in such illnesses among vaccinated women. Infants born to mothers immunized during flu season were significantly larger than those born to mothers

who received the control vaccine during the same period—a mean of 3,186 g, compared with a mean of 2,972 g for infants born to nonimmunized mothers.

The striking difference in birth weights suggests that, in addition to those who were overtly ill, many unvaccinated mothers were exposed to mild cases of influenza that may have had an effect on the nutrition delivered to the placenta, said Dr. Steinhoff.

The theory makes sense because many other mild infections, including urinary tract infections, have been known to have a similarly detrimental effect on the developing fetus.

Evidence of healthier birth weights from a randomized controlled trial provide “very strong evidence that receiving the vaccination makes a difference,” said Dr. Steinhoff.

Further support for maternal seasonal influenza vaccination came from Saad B. Omer, Ph.D., of Emory University’s Rollins School of Public Health in Atlanta.

He presented results of a retrospective study of health records from the Georgia Pregnancy Risk Assessment Monitoring System (PRAMS) designed to calculate the impact of maternal influenza im-

munization on prematurity and birth weight in a U.S. population.

A total of 6,410 births occurred between June 2004 and September 2006, with just 15% of infants born to mothers who were immunized for influenza during their pregnancies.

Immunized mothers were 70% less likely to give birth prematurely during

widespread influenza activity periods, with an odds ratio of 0.3 (0.1-0.7), he said.

When potential confounders were controlled for, the likelihood of delivering a baby small for

gestational age (SGA) was reduced by 70% as well, Dr. Omer reported at the press conference. The study results remained significant even after maternal age, race, insurance status, and prepregnancy maternal weight were controlled for.

In a third study, Yale University researchers investigated the impact of maternal immunization during pregnancy on the health of their infants from birth to 1 year of life.

Preliminary results of a matched case-control study (157 cases, 195 matched controls) found a 79% reduction in hospitalization among the infants aged 0-12 months when their mothers were vac-

nated during pregnancy, reported Dr. Mariette Vázquez, a pediatrician at Yale, New Haven, Conn.

Protection appeared greatest (an 85% reduction in hospitalizations) among the most vulnerable infants, those 6 months or younger. Influenza vaccine is not recommended for children younger than age 6 months. When unvaccinated mothers were asked why they did not receive the flu shot during pregnancy, as recommended by the American College of Obstetricians and Gynecologists, most said they were never offered the vaccine, Dr. Vázquez said.

Findings from previous studies suggest that a “cultural change” may be necessary for obstetricians to become more involved in influenza vaccination campaigns, said Dr. William Schaffner, moderator of the press conference and a preventive medicine specialist from Vanderbilt University Medical Center in Nashville, Tenn.

While pediatricians consider vaccination a key part of their practices, obstetricians’ offices aren’t set up to order, store, and deliver vaccines, he said. However, evidence presented at the meeting of a “powerfully protective” effect on infants when their mothers are vaccinated during pregnancy may help to spur obstetricians to take a more active role in influenza prevention efforts, Dr. Schaffner predicted.

Dr. Steinhoff reported that he has received research grants from vaccine manufacturers Wyeth and Sarnoff-Aventis. ■

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Managing Several Serious Skin Diseases in Expectant Moms

BY HEIDI SPLETE

SAN FRANCISCO — Many women experience minor skin conditions such as pruritus, stretch marks, and melasma during pregnancy, but several serious skin diseases can emerge.

When it comes to treating skin conditions in pregnant women, it is important to remember that there is a great deal of variation in how these patients experience symptoms, Dr. Kristin M. Leiferman explained at a meeting sponsored by Skin Disease Education Foundation.

Many mothers-to-be will endure some degree of skin discomfort such as itching, rather than take medications, she said. “But pregnant women need to be monitored closely for secondary problems associated with skin disorders, including cutaneous infection, fluid balance problems, excessive blistering or erosion, and lack of sleep due to discomfort from itching.”

Dr. Kristin M. Leiferman of the University of Utah, Salt Lake City, reviewed several dermatoses of pregnancy, including:

► **Polymorphic eruption of pregnancy/pruritic urticarial papules and plaques of pregnancy (PEP/PUPPP).** The pathogenesis of PEP/PUPPP remains unknown but many theories persist, including those citing the role of hormones, fetal DNA, and placental factors, Dr. Leiferman said. The condition has a nonspecific inflammatory pattern, and there may be perivascular lymphocytic infiltration in the upper and middle dermis.

The differential diagnosis for PEP/PUPPP should start by ruling out scabies, Dr. Leiferman noted. Once scabies is ruled out, a dermatologist’s differential should include pemphigoid gestationis, atopic eruption of pregnancy, contact dermatitis, drug eruption, erythe-

ma multiforme, and pityriasis rosea, she said.

► **Pemphigoid gestationis.** This condition is an autoimmune disorder that typically begins with urticaria or blistering around the umbilicus, Dr. Leiferman noted. Until or unless blistering occurs, this condition may be difficult to distinguish from PEP/PUPPP, she said, although PEP/PUPPP does not usually involve the area immediately around the umbilicus.

Pemphigoid gestationis may occur during or immediately after pregnancy, or it can occur with hormone use. The condition can present with urticarial, arch-shaped plaques in addition to dermatitis and blisters. The current evidence suggests that pemphigoid gestationis occurs when the protection of a fetus from the mother’s immune response breaks down. When diagnosing pemphigoid gestationis, be sure to rule out varicella and pemphigus vulgaris, Dr. Leiferman emphasized.

► **Cholestasis of pregnancy.** This condition is characterized by a sudden onset of itching, first on the palms and soles, and then the itching becomes generalized. Cholestasis of pregnancy does not include primary skin lesions, but it can have serious effects for both mother and fetus. It may cause gallstones or jaundice in the mother, and increased levels of serum bile salts can enter the fetal circulation and cause a reduction in the level of oxygen in the placenta. The oxygen dip can lead to cardiac depression and increase the risk of prematurity, fetal distress, and stillbirth.

► **Atopic eruption of pregnancy.** This condition encompasses three previously recognized distinct skin conditions—prurigo of pregnancy, pruritic folliculitis of pregnancy, and eczema of pregnancy, Dr. Leiferman explained. Most patients have atopic dermatitis, from which the name derives. Studies suggest that approxi-

mately half of these patients have signs of eczema and approximately one-third have signs of papules and prurigo.

The histology of atopic eruption of pregnancy is nonspecific, and debate continues as to whether the condition should be considered a distinct dermatosis of pregnancy or an exacerbation of a skin disease with pregnancy, said Dr. Leiferman.

► **Impetigo herpeticiformis.** Another disorder previously thought to be a dermatosis of pregnancy is impetigo herpeticiformis, now generally regarded as a variant of pustular psoriasis, Dr. Leiferman stated. It rapidly resolves after delivery, but recurrences in subsequent pregnancies are common and are more severe with earlier onset. Neonatal death or stillbirth may result from placental insufficiency. Recurrences with menses can occur for years, she said.

With pregnancy-associated dermatoses, “treatment should be tailored to the symptoms and to the disease with the least amount [of] and least potentially toxic medications that will keep the mother comfortable and the baby safe,” Dr. Leiferman said in an interview.

“Certain pregnancy-associated dermatoses may respond to skin care that helps reduce itching, and to topical medications from which little is absorbed internally,” she explained. By contrast, when the skin is blistered or eroded, more aggressive treatments are needed.

Systemic glucocorticoids, such as prednisone, are the main therapy for pemphigoid gestationis and other severe pregnancy-related skin problems, said Dr. Leiferman. “Their use in pregnancy is well studied, and they generally are tolerated, but they may be associated with placental calcifications and low-birth-weight infants.”

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