MRSA a Rising Cause Of Postpartum Mastitis

BY SHERRY BOSCHERT

SAN FRANCISCO — Postpartum mastitis and breast abscesses increasingly are being traced to community-associated infection with methicillin-resistant *Staphylococcus aureus*.

Fortunately, the risk of neonatal transmission or colonization in these cases is very low, and preliminary data suggest there's no increased risk of adverse neonatal outcomes even if the mother initially is given the wrong treatment for community-associated methicillin-resistant *S. aureus* (CA-MRSA), Dr. Natali Aziz said at a conference on antepartum and intrapartum management sponsored by the University of California, San Francisco.

In general, as many as one in three breastfeeding women in the United States develops postpartum mastitis, with approximately 10% of these developing breast abscesses. Studies of breast milk cultures have found *S. aureus* present in 37%-50% of mastitis cases.

As many as one in three breastfeeding women in the United States develops postpartum mastitis, with approximately 10% of these developing breast abscesses.

A case-control study of 48 cases of *S. aureus*–associated postpartum mastitis in 1998-2005 found that 17 (81%) of 21 cases that were resistant to methicillin occurred in 2005 (Emerg. Infect. Dis. 2007;13:298-301).

Genetic analyses also suggested that 20 of the 21 MRSA cases were due to community-acquired MRSA, which may reassure clinicians that mastitis associated with MRSA should be susceptible to oral antibiotics, added Dr. Aziz of the university.

What few data exist on postpartum MRSA infection suggest that most cases involve mastitis or soft tissue infection, and that mastitis commonly leads to abscesses, she said. In one series of 10 postpartum MRSA infections, 4 affected the breast, 3 were associated with incisions, and 3 were in soft tissue. In another series of eight postpartum MRSA infections, half were in the breast, and three of these four cases progressed to abscesses.

The 21 cases of MRSA were less likely than the methicillin-susceptible cases to receive timely and appropriate treatment, but there were no significant differences in clinical outcomes in this small study, she noted.

In the largest study to date of hospitalized women with puerperal mastitis, cultures from 35 women who had both mastitis and breast abscesses found that CA-MRSA was the most common organism in breast abscesses, with MRSA in approximately two-thirds of cases. MRSA was much less likely in 54 women who had mastitis alone, growing in only one culture. As in the smaller study, a majority of women with CA-MRSA did not receive an appropriate antibiotic, but empiric use of an ineffective antibiotic did not adversely affect outcomes (Obstet. Gynecol. 2008;112:533-7).

At San Francisco General Hospital in 2005, *S. aureus* was cultured in the breast milk of 8 of 15 cases of mastitis; only 2 had MRSA, but three women with breast abscesses all had MRSA, Dr. Aziz said.

The data so far suggest that clinicians can continue to treat routine cases of mastitis with conventional first-line medications, and that it's reasonable to start treatment for CA-MRSA before cultures are completed in patients with abscesses or recurrent failure on conventional mastitis therapy. Consider getting cultures for recurrent disease, in areas with a high prevalence of CA-MRSA, or in patients with risk factors for CA-MRSA.

"Be aware of your local epidemiology for your antibiotic choice" for CA-MRSA, Dr. Aziz advised, and remember that abscesses with CA-MRSA usually will require adjunct drainage.

Women whose breast milk is colonized with CA-MRSA without mastitis can continue to breastfeed or pump breast milk for term infants, but this may put preterm infants at higher risk of conjunctivitis or other problems, case reports suggest.

It is not cost effective to universally screen for MRSA or to decolonize women with MRSA in obstetric populations, a recent decision-analysis study concluded (Obstet. Gynecol. 2009;113:983-91).

Dr. Aziz said she has no conflicts of interest. ■

DRUGS, PREGNANCY, AND LACTATION

Treatment of Lower Urinary Tract Disorders

BY GERALD G. BRIGGS, B.PHARM., FCCP

Lower urinary tract disorders are common in women and, among other risk factors, increase with age and a history of previous pregnancies. These disorders include incontinence, painful bladder syndrome, urinary frequency (overactive bladder), painful bladder syndrome, and bacterial cystitis.

Although most of these disorders occur in later years and do not involve a pregnant patient, women are at risk for these complications throughout their reproductive years.

Exposure of the embryo or fetus can occur if a woman becomes pregnant during treatment or if she is treated in a known or unknown pregnancy. Moreover, drug treatment can occur during lactation and expose a nursing infant to the therapy. The probability of pregnancy and lactation exposure has increased as more women have delayed starting a family until later years. Thus, the treatment of lower urinary tract disorders must take into account the possible presence of an embryo, a fetus, or a nursing infant.

Several drugs are available to treat urinary tract disorders; however, few have been studied in pregnancy or during breastfeeding. Nevertheless, these agents do not appear to pose a significant risk to the embryo, fetus, or nursing infant. The agents most commonly used can be categorized into five primary pharmacologic subclasses: anti-infectives for acute bladder infections, urinary germicides, analgesics, anticholinergics (antispasmodics), and cholinergics. The Food and Drug Administration risk categories for the drugs are shown in brackets below (no category designation is provided if the drug has not been rated).

Nearly all anti-infectives used to treat bacterial cystitis are compatible in pregnancy and lactation. These include the penicillins [all B], cephalosporins [all B], aminoglycosides [C or D], sulfonamides [C], and fosfomycin (Monurol) [B]. Tetracyclines [D] should be avoided in pregnancy, but they are compatible with nursing, and sulfonamides should be avoided near term because of the theoretical risk of kernicterus. If sulfonamides are combined with trimethoprim (such as in Bactrim and Septra) [C], concurrent folic acid (such as in most prenatal vitamins) must be taken because trimethoprim is a folate antagonist. Its first-trimester use without the vitamin has been associated with cardiovascular defects, neural tube defects, and possibly oral clefts.

Urinary germicides include cinoxacin (Cinobac) [C], methenamine [C], nalidixic acid (NegGram) [C], and nitrofurantoin (Macrodantin) [B]. These agents are used for prophylaxis or suppression/elimination of recurring urinary tract infections when long-term therapy is required. All are compatible with breastfeeding. Cinoxacin and nalidixic acid are quinolones that have little or no data regarding use in pregnancy. Either agent is probably low risk for use in gestation, but one study did find an association between third-trimester nalidixic acid exposure and pyloric stenosis (Int. J. Gynecol. Obstet. 2001;73:221-8).

Among the germicides, nitrofurantoin has the most human pregnancy data. No apparent embryo or fetal risk has been found when used throughout gestation except near term. Use near term has been associated with rare cases of hemolytic anemia in newborns with glucose-6-phosphate dehydrogenase (G6PD) deficiency. Newborns without G6PD deficiency also are at risk because of immature erythrocyte enzyme systems (glutathione instability). Although the manufacturer states that the drug is contraindicated at term (38-42 weeks), many physicians will stop the drug at 36 weeks.

Urinary analgesics are used for symptomatic relief of pain in the lower urinary tract mucosa (phenazopyridine [Pyridium]) [B] and interstitial cystitis (pentosan [Elmiron]) [B]. The human data for phenazopyridine are limited, but there is no evidence that this drug produces toxicity in the embryo or fetus. Although there is no information about its excretion into breast milk, its properties suggest that at least some will be excreted. Phenazopyridine is a dye and will impart an orange-red tinge to urine and, probably milk.

Pentosan is a low-molecular-weight heparinoid compound that has anticoagulant and fibrinolytic effects. The only reported human pregnancy experience involved eight women given an intravenous dose in the second trimester immediately before undergoing elective abortion. Anticoagulant effects were noted in the mothers but not in the cord blood of the fetuses before abortion. The data suggest that fetal exposure is nil, but the effects in the mothers have little relevance because the drug is available only as an oral capsule and absorption is very low (about 3%). Breastfeeding probably is compatible.

There are seven anticholinergics that are used as antispasmodics for the treatment of overactive bladder: darifenacin (Enablex) [C], fesoterodine (Toviaz) [C], flavoxate (Urispas) [B], oxybutynin (Ditropan) [B], solifenacin (Vesicare) [C], tolterodine (Detrol) [C], and trospium (Sanctura) [C]. There are either limited or no human pregnancy data for these agents. However, except for solifenacin, the animal data suggest low risk. Moreover, an association with structural anomalies and other aspects of developmental toxicity has not been found with any anticholinergic agent. Although there are also no human data regarding the excretion of these drugs into breast milk, the American Academy of Pediatrics classifies the prototype anticholinergic atropine as compatible with breastfeeding. There is no reason to believe that the seven agents would be classified differently. The only potential exception is tolterodine because it has an equipotent active metabolite.

Taken in sum, the agents used for lower urinary tract disorders exhibit little potential risk for the embryo, fetus, or nursing infant. Nevertheless, their use should be confined to short intervals because, with few exceptions, most have little or no reported human pregnancy or breastfeeding experience.

MR. BRIGGS *is a pharmacist clinical specialist, Women's Pavilion, Miller Children's Hospital, Long Beach, Calif.; a clinical professor of pharmacy, University of California, San Francisco; and an adjunct professor of pharmacy, University of Southern California, Los Angeles.*