MRSA Present in 2% of Women Entering L&D

BY SHERRY BOSCHERT
San Francisco Bureau

MONTEREY, CALIF. — Two (2%) of 98 pregnant women being admitted for labor or a scheduled C-section were colonized with methicillin-resistant *Staphylococcus aureus* in a pilot study, Dr. Richard H. Beigi reported in a poster presentation at the annual meeting of the Infectious Diseases Society for Obstetrics and Gynecology.

The results of the study are consistent with a 2%-4% colonization rate for methicillin-resistant *S. aureus* (MRSA) found in some populations, though higher rates have been seen in select populations. These are among the first data on MRSA in women entering labor and delivery wards, said Dr. Beigi, who performed the study at MetroHealth Medical Center, Cleveland, and now is at Magee-Women's Hospital, Pittsburgh.

"It emphasizes the fact that we need to have very good hand hygiene," he said in an interview at the poster session. The study was funded by Steris Corp., which makes a hand hygiene product.

The 2% rate provides a baseline for comparisons as the incidence of MRSA is tracked in labor and delivery over time. Ongoing surveillance is warranted given the increasing rates of MRSA in other specialties and the limited number of effective drug treatments for complications of MRSA infection, said Dr. Beigi and his associates.

Of the 96 women, 21 (22%) had *S. aureus* detected in samples from the anterior nares. Two (10%) of the 21 with *S. aureus* had MRSA. One of the women with MRSA worked in a hospital, and the other had no contact with a hospital or hospital workers as a potential source for her MRSA colonization.

Eight (38%) of the 21 isolates with *S. aureus* demonstrated inducible clindamycin resistance, and one of these was a strain with MRSA. The clinical implications of this are unclear, but MRSA plus clindamycin resistance would further narrow choices for therapy.

In a subset of 28 women who also had cultures obtained from the outer third of the vagina, 23 (82%) had concordant findings, meaning that if they were positive or negative for *S. aureus* in one anatomical site, they had the same result at the other site.

Six postpartum infections potentially were attributable to *S. aureus*—two cases of mastitis and four wound infections after C-section. Postpartum infection rates were twice as high in women with *S. aureus* (10%), compared with uncolonized women (5%), but the difference was not statistically significant. A larger study might show a significant difference in infection rates, Dr. Beigi suggested. ■

Cefazolin Found Still Effective For Antepartum Pyelonephritis

BY SHERRY BOSCHERT
San Francisco Bureau

MONTEREY, CALIF. — Cefazolin remained an effective empiric therapy for antepartum pyelonephritis over the last 14 years, Dr. Soldrea Roberts said at the annual meeting of the Infectious Diseases Society for Obstetrics and Gynecology.

A retrospective study compared data on 136 women with antepartum pyelonephritis who were treated at one institution in two time periods, 1992-1993 and 2004-2006. Records revealed positive cultures in 76%, and 89% of these were caused by gram-negative isolates, found in 47 women in the earlier period and 46 in the later period.

Rates of multidrug resistant organisms causing antepartum pyelonephritis were not significantly different between periods but trended upward, from 32% of isolates in 1992-1993 to 43% in 2004-2006. Multidrug resistance was defined as resistance to at least 3 of an average of 10 antimicrobials tested per isolate.

E. coli caused more than 70% of cases. High rates of ampicillin-resistant *E. coli* were seen in both time periods—51% of cases in 1992-1993 and 54% of cases in 2004-2006—which confirms the inadequacy of ampicillin for empiric therapy of antepartum pyelonephritis, according to Dr. Roberts of Case Western Reserve University, Cleveland, Ohio, and her associates.

E. coli resistance to trimethoprim-sulfamethoxazole increased significantly from 5% of isolates in the earlier years to 23% in the later years, consistent with trends toward greater trimethoprim-sulfamethoxazole resistance in lower urinary tract infections over this time period. Only 5% of *E. coli* isolates were resistant to cefazolin in 1992-1993 and all isolates in 2004-2006 were susceptible to cefazolin despite concerns about the emergence of multidrug-resistant gram-negative rods over the past two decades, Dr. Roberts said.

The study was 80% powered to detect a 30% increase in multidrug-resistant isolates between the two time periods.

The likelihood of multidrug resistance was not affected by having a history of antepartum pyelonephritis.

Clinical outcomes did not differ significantly between the two time periods. The average length of hospitalization was 3 days in both periods and did not differ between women with or without multidrug-resistant organisms. Antibiotic regimens were changed during hospitalization in 13% in the earlier period and 11% in the later period. In 1992-1993, 96% of the women delivered at term, compared with 65% in 2004-2006. ■

LMWH During Pregnancy Preserves BMD

BY MITCHEL L. ZOLER
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LISBON — Long-term treatment with low-molecular-weight heparin during pregnancy did not cause a drop in spinal bone mineral density in a study with 62 women.

Extended administration of low-molecular-weight heparin (LMWH) during pregnancy, as prophylaxis for thrombophilia, also did not produce a clinically important fracture risk, Dr. Marc A. Roger said at the third World Congress of the International Society of Obstetric Medicine.

In contrast, long-term treatment with unfractionated heparin during pregnancy often causes a drop in bone mineral density—frequently a clinically significant drop, said Dr. Roger, head of the thrombosis and hemostasis program at Ottawa Hospital. According to prior study results, up to 2.2% of women who have had prolonged exposure to unfractionated heparin during pregnancy develop osteoporotic fractures.

The new findings came from a prespecified subgroup analysis of data collected in the Thrombophilia in Pregnancy Prophylaxis Study (TIPPS), an ongoing, multicenter trial that was designed to compare prophylaxis using LMWH with placebo for pregnancy outcomes in women with a thrombophilia. The subanalysis was designed to assess the effect of LMWH on bone mineral density.

Both TIPPS and the bone mineral density subanalysis were sponsored by Pfizer, which markets dalteparin (Fragmin), the LMWH used in the studies. Dr. Roger has received research support from and is on a scientific advisory board for Pfizer.

TIPPS enrolled women with confirmed thrombophilia at less than 20 weeks' gestation who were at risk for thromboembolism or had a history of pregnancy complications. They were randomized to placebo or to 5,000 U dalteparin daily through week 20, followed by a regimen of 5,000 U b.i.d. through delivery. All women in the study received dalteparin post partum for 6 weeks.

'We can say with confidence that if low-molecular-weight heparin [in pregnancy] causes a difference in bone density, it's a small difference.'

In the substudy, which involved 62 women, the primary end point was the absolute lumbar-spine bone mineral density measured at 6 weeks post partum. Because of crossovers, 33 women received dalteparin and 29 women received placebo.

The average bone mineral density was 1.15 g/cm^2 in the LMWH group and 1.20 g/cm^2 in the control group, a difference that was not statistically significant. In addition, the 95% confidence interval for bone mineral density in the dalteparin group did not enter the range that defines osteopenia (less than one standard deviation below the mean).

Hence, "we can say with confidence that if low-molecular-weight heparin causes a difference in bone density, it's a small difference," Dr. Roger said. ■

Screening for Thrombophilia In Pregnancy Called Futile

LISBON — There is absolutely no reason today to universally screen pregnant women for inherited thrombophilias, Dr. Ian A. Greer said at the 15th World Congress of the International Society for the Study of Hypertension in Pregnancy.

Although easy and accurate tests for inherited thrombophilias are available, the best management of women who have these disorders remains unclear. A systematic review of the literature turned up results from just one randomized, controlled trial showing that pregnant women with a thrombophilia—in this case, antiphospholipid syndrome—had a modest benefit from treatment with aspirin and heparin, said Dr. Greer, professor of obstetrics and gynecology at the University of Glasgow, Scotland. But antiphospholipid syndrome is an acquired, not inherited, thrombophilia and no other results from randomized, controlled trials in women with a thrombophilia have been reported, he said.

The top priority today is to run more controlled studies to test various antithrombotic treatments in women with thrombophilia rather than starting widespread screening, Dr. Greer said. Although aspirin, unfractionated heparin, and low-molecular-weight heparin are all treatment options, alone or in combination, not enough evidence currently exists to recommend any specific regimen over the others.

Dr. Greer and his associates have run a cost-effectiveness analysis of thrombophilia screening and treatment, using a hypothetical, representative population of 10,000 pregnant women. They assumed that treatment with low-molecular-weight heparin would have an 80% efficacy for preventing adverse maternal and fetal outcomes, including intrauterine growth restriction, miscarriage, and preeclampsia.

In this analysis, the cost for preventing a single adverse event through universal screening would be about $90,000. The cost to prevent a single adverse event would be about $80,000 using selective screening of women with a personal or family history of thrombophilia or venous thromboembolism, Dr. Greer said.

—Mitchel L. Zoler