Candida Resistance Is Rare in High-Risk Nurseries in the U.S.

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MIAMI — Resistance to Candida species is rare in high-risk nurseries in the United States, according to a study from the Centers for Disease Control and Prevention presented in a poster at a meeting on fungal infections sponsored by Imedex.

Scott Fridkin, M.D., and colleagues also found the overall rate of invasive candidiasis in very-low-birth-weight infants has decreased since 2000—although they are unsure why.

Candida bloodstream infections are the third most common cause of late-onset sepsis in the neonatal intensive care unit. Incidence and resistance information could help target azole antifungal prophylaxis in this population.

The CDC investigators reviewed all cases of invasive candidiasis in neonates registered in the high-risk nursery section of the National Nosocomial Infections Surveillance System from January 1993 to December 2004. A total of 129 high-risk nurseries contributed information on 130,523 patients.

Dr. Fridkin, medical officer in the Division of Bacterial and Mycotic Diseases at the CDC’s National Center for Infectious Diseases in Atlanta, and his associates assessed the incidence of invasive candidiasis among infants admitted to intensive care by birth weight, as well as the incidence of Candida blood stream infections associated with central venous catheter use.

They also looked for rates of resistance to different Candida species.

“The big take-home message is the [low] number of invasive candidiasis infections,” Dr. Fridkin said in an interview at the meeting.

The rate of disease in very-low-birth-weight infants decreased considerably since 2000. (See chart.) Although the decrease could be a result of antifungal prophylaxis or improved use of catheters, “why it went down is pure conjecture,” said Dr. Fridkin.

Dr. Fridkin and his colleagues identified 1,997 neonates (1.1%) with invasive candidiasis. Most of these cases of invasive candidiasis (1,472 [74%]) occurred in infants with a birth weight less than 1,000 g.

The incidence of invasive candidiasis varied by species, with 58% attributed to C. albicans, 34% to C. parapsilosis, 4% to C. glabrata, 2% to C. tropicalis, 2% to C. lusitaniae, and 0.2% to C. krusei.

Incidence of invasive candidiasis among infants with birth weight less than 1,000 g varied greatly between individual high-risk nurseries, the researchers noted—as did incidence density (the number of Candida blood stream infections per 1,000 central venous catheter days).

The researchers looked for resistance in C. glabrata and C. krusei, species commonly resistant to azole treatment. They wrote, “Although invasive candidiasis is a serious problem among neonates less than 1,000 g, invasive candidiasis due to species commonly resistant to azoles were extremely rare.”

Dr. Fridkin said, “Despite all the fear about antifungal resistance in the NICU, these data say, right now in the U.S., there is almost no resistance to yeast. It’s a real solid finding.”

Dr. Pichichero, a specialist in pediatric infectious diseases, practices in Rochester, N.Y. He is also professor of pediatrics, medicine, microbiology, and immunology at the University of Rochester.