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A Study at The Nebraska Medical Center Shows Community-Acquired MRSA Is Thriving In Nebraska

Omaha, Neb. - Newspaper and television reports have recently been full of tragic stories about persons succumbing to a bacterial infection caused by community-acquired methicillin-resistant *Staphylococcus aureus* (*S. aureus*), also known as CA-MRSA. However, there has been little data reported regarding the prevalence of this bug in Nebraska. Recently, a team of researchers at The Nebraska Medical Center reported their findings that indicate CA-MRSA is thriving in Nebraska, but contrary to some of the hype, most infections caused by CA-MRSA are relatively mild skin and soft tissue ailments that can be fairly easily treated. The study was led by Elizabeth Hermsen, PharmD, MBA, infectious diseases pharmacist, Mark E. Rupp, MD, infectious diseases specialist, and Richard A Walker, MD, emergency medicine specialist. Co-investigators included Matt Garr, PharmD, Katherine Reisbig, PharmD, Melissa Maiefski, PharmD, and Wendy Friedig, PharmD. The study consisted of a retrospective review of patients who presented to The Nebraska Medical Center Emergency Department (ED) with skin and soft tissue infections (SSTIs) in a two-month period between September and October of 2006.

During this two-month period, 152 patients were evaluated for a SSTI. Of those with positive bacterial cultures, 88 percent were reported to be infected with *S. aureus* and over three-quarters of these patients were identified to have MRSA. Most of the patients did not have factors traditionally associated with healthcare-acquired MRSA such as recent hospitalization, antibiotic therapy, hemodialysis or residence in a nursing home and thus, were classified as having CA-MRSA.

“As has been seen in other studies on CA-MRSA, most patients infected with this pathogen have relatively mild infections involving the skin which can be treated with minor surgical drainage and oral antibiotics,” says Dr. Rupp. “Rarely do we see patients with more severe manifestations such as pneumonia or bloodstream infection. However, this study clearly documented that CA-MRSA is common in Omaha and healthcare providers in primary care settings need to adjust their antibiotic choices to take this into account.”

The findings were published in the Cornhusker Family Physician Journal, published by the Nebraska Academy of Family Physicians, and the Metro Omaha Medical Society Journal to raise awareness of local data among local doctors, adds Dr. Rupp.

Antibiotic resistance in *S. aureus* is nothing new. “MRSA infections were first documented in 1961 and for many years, MRSA was predominantly a hospital-acquired problem,” says Dr. Hermsen. “Recently, however, the emergence of MRSA infections in patients without traditional risk factors for hospital-acquired MRSA has been observed.”

The Centers for Disease Control and Prevention recently reported that MRSA infections are a major public health problem and more widespread than previously thought. In a study published in the Journal of the American Medical Association, CDC researchers said that MRSA infections kill more people annually than AIDS. Dr Rupp concurred, but emphasized that 85 percent of the infections noted in the CDC report were hospital-acquired infections.

“For the most part, CA-MRSA infections are very treatable when the proper antibiotics are used,” says Dr. Walker. “The problem is that the prevalence of CA-MRSA has been underestimated, which probably accounts for the use of inadequate antibiotic regimens.” Inadequate antibiotic coverage has been observed in 57 to 73 percent of patients, says Dr. Rupp. Since the study, The Nebraska Medical Center has provided additional training and education of Emergency Department staff to improve diagnosis and proper treatment of the infection.

Staphylococci frequently inhabit normal human skin and are generally harmless unless they enter the body through a cut or open wound. Rupp recommended some measures that all of us should take to avoid infection: pay attention to skin health and hand hygiene; and if you suffer a minor skin abrasion or cut, wash the area with soap and water and cover it with a clean bandage. In addition, the chance for outbreaks in school settings can be minimized by optimizing hygiene in locker rooms and sports settings. Athletes should not share items that can transmit bacteria like towels and razors. Any student athlete with a skin infection (boil or abscess) should be excluded from the sport until it is healed.

Lastly, Rupp noted that hospitals nationwide need to get more serious about preventing these infections in the healthcare setting. “Poor hand hygiene practices amongst healthcare workers cannot be tolerated,” he says.

With a reputation for excellence, innovation and extraordinary patient care, The Nebraska Medical Center has earned J.D. Power and Associates' Hospital of Distinction award for two consecutive years. It also received the 2007 Consumer Choice Award, a mark of patient satisfaction as selected by healthcare consumers and has achieved Magnet recognition status for nursing excellence, Thomson 100 Top Hospitals Performance Improvement Leader recognition, as well as the Award of Progress from the state of Nebraska's Edgerton Quality Awards Program. As the teaching hospital for the University of Nebraska Medical Center, this 689 licensed bed academic medical center has an international reputation for providing solid organ and bone marrow transplantation services and is well known nationally and regionally for its oncology, neurology and cardiology programs. The Nebraska Medical Center can be found online at www.nebraskamed.com