Palmetto Vital Care

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Special point of interest:

- Continuing Education Seminar coming in February.

Staphylococcus aureus Resistant to Vancomycin — United States 2002

Staphylococcus aureus is a cause of hospital- and community-acquired infections (*1,2*). In 1996, the first clinical isolate of *S. aureus* with reduced susceptibility to vancomycin was reported from Japan (*3*). The vancomycin minimum inhibitory concentration (MIC) result reported for this isolate was in the intermediate range (vancomycin MIC=8 µg/mL) using interpretive criteria defined by the National Committee for Clinical Laboratory Standards (*4*). As of June 2002, eight patients with clinical infections caused by vancomycin-intermediate *S. aureus* (VISA) have been confirmed in the United States (*5,6*). This report describes the first documented case of infection caused by vancomycin-resistant *S. aureus* (VRSA) (vancomycin MIC ≥32 µg/mL) in a patient in the United States. The emergence of VRSA underscores the need for programs to prevent the spread of antimicrobial-resistant microorganisms and control the use of anti-microbial drugs in health-care settings.

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In June 2002, VRSA was isolated from a swab obtained from a catheter exit site from a Michigan resident aged 40 years with diabetes, peripheral vascular disease, and chronic renal failure. The patient received dialysis at an outpatient facility (dialysis center A). Since April 2001, the patient had been treated for chronic foot ulcerations with multiple courses of antimicrobial therapy, some of which included vancomycin. In April 2002, the patient underwent amputation of a gangrenous toe and subsequently developed methicillin-resistant *S. aureus* bacteremia caused by an infected arteriovenous hemodialysis graft. The infection was treated with vancomycin, rifampin, and removal of the infected graft. In June, the patient developed a suspected catheter exit-site infection, and the temporary dialysis catheter was removed; cultures of the exit site and catheter tip subsequently grew *S. aureus* resistant to oxacillin (MIC >16 µg/mL) and vancomycin (MIC >128 µg/mL). A week after catheter removal, the exit site appeared healed; however, the patient's chronic foot ulcer appeared infected. VRSA, vancomycin-

Staphylococcus aureus Resistant ... Continued

resistant *Enterococcus faecalis* (VRE), and *Klebsiella oxytoca* also were recovered from a culture of the ulcer. Swab cultures of the patient's healed catheter exit site and anterior nares did not grow VRSA. To date, the patient is clinically stable, and the infection is responding to outpatient treatment consisting of aggressive wound care and systemic antimicrobial therapy with trimethroprim/sulfamethoxazole.

The VRSA isolate recovered from the catheter exit site was identified initially at a local hospital laboratory using commercial MIC testing and was confirmed by the Michigan Department of Community Health and CDC. Identification methods used at CDC included traditional biochemical tests and DNA sequence analysis of *gyrA* and the gene encoding 16S ribosomal RNA. Molecular tests for genes unique to enterococci were negative. The MIC results for vancomycin, teicoplaninin, and oxacillin were >128 µg/mL, 32 µg/mL, and >16 µg/mL, respectively, by the broth microdilution method. The isolate contained the *vanA* vancomycin resistance gene from enterococci, which is consistent with the glycopeptide MIC profiles. It also contained the oxacillin-resistance gene *mecA*. The isolate was susceptible to chloramphenicol linezolid, minocycline, quinupristin/dalfopristin, tetracycline, and trimethoprim/sulfamethoxazole.

Epidemiologic and laboratory investigations are under way to assess the risk for transmission of VRSA to other patients, health-care workers, and close family and other contacts. To date, no VRSA transmission has been identified. Infection-control practices in dialysis center A were assessed; all health-care workers followed standard precautions consistent with CDC guidelines (*7*). After the identification of VRSA, dialysis center A initiated special precautions on the basis of CDC recommendations (*8*), including using gloves, gowns, and masks for all contacts with the patient; performing dialysis with a dedicated dialysis machine during the last shift of the day in an area separate from other patients; having a dialysis technician dedicated to providing care for the patient; using dedicated, noncritical patient-care items; and enhancing education of staff members about appropriate infection-control practices. Assessment of infection-control practices in other health-care settings in which the patient was treated is ongoing.

"After the identification of VRSA, dialysis center A initiated special precautions on the basis of CDC recommendations,..."

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Plasma Therapies Movement is Driven by Safety Measures, Industry Consolidation and Industry/Patient Communications

There is a significant movement on the plasma– derived products front of IV therapy. A movement that is marked by voluntary industry efforts and shifts in the market through consolidation which are ensuring safer products in greater quantities for traditional, as well as, new patient diagnosis groups in dire need of plasma therapies. Improvements in safety measures, availability and industry/patient communication are the cornerstones for the vast changes that are occurring.

On the safety front, Christopher P. Healey, Executive Director of the Plasma Protein Therapeutics Association (PPTA) North America says, "We are confident that plasma products are as safe as they can be." Jan M. Bult, President of PPTA Global, echoes Healey's sentiments by stating, "At the end of the day, quality and safety are the drivers." PPTA is currently pushing for international quality standards and regulations. These global standards will create industry wide synergy with no product deviations. This will facilitate manufacturers' shipments to a broader array of customers and allow for more efficiencies in covering spot shortages.

The collections and fractionation side of the industry has recently merged the American

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Blood Resources Association (ABRA) with PPTA. In the early 1990's, The Quality Plasma Program (QPP), which consist of the Viral Marker Standards (HIV, HBV, HCV), was developed by the ABRA . These QPP standards have evolved to be a global industry screening benchmark for centers collecting source plasma to be pooled and fractionated to manufacture a wide array of plasma-derived products.

PPTA developed four voluntary standards in 1996 for companies to follow to further enhance the quality of products delivered to the patient. These standards were the basis for the Quality Standards of Excellence, Assurance, and Leadership (QSEAL). Parvovirus B19 was added as the fifth voluntary standard this year. The five companies that have attained QSEAL certification are Alpha Therapeutic Corporation, Aventis Behring, Biotest Pharma, Baxter BioScience, and Bayer Corporation. PPTA North America's Healey states, "Reaching this level of safety screening indicates the level of quality in our industry."

On the availability front, mergers on the global scene have caused 'horizontal compression' in the industry. Consolidation has also begun on the collections side facilitating vertical integration. PPTA Global's Bult states, "Product availability will improve because there is less duplication of effort needed to get the products to market."

PPTA, the American Red Cross, and Novartis provide monthly data on the U.S. distribution of plasma products. This information was supplied twice a month during the last shortage of recombinant factor. The Patient Notification System facilitates the communications effort and allows for efficient dissemination of recombinant product recall and withdrawal information.

Great strides are being made to ensure quality and availability of plasma-derived therapies.

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Palmetto Vital Care's Continuing Education Seminar Provides Area Nurses CEU Credits

The area nurses are delighted that they were able to attend Palmetto Vital Care's Continuing Education Seminar for nurses, which, provided them with CEU credits. The in-service was July 30th, 31st and August 1st. Courses that were offered during the three day seminar included: Vascular Access Devices, Total Parenteral Nutrition, Enteral Nutrition, Inotropic Therapy, Antibiotic Therapy, Pain Management and Technology and the Nurse. Along with the knowledge gained from the three day seminar, the nurses were provided wonderful lunches at Rockhoppers in Clemson.

Healthcare providers and medical practices that were represented at the seminar include: Anderson DHEC Home Health, Anesthesiologists of the Upstate, Appalachia DHEC Home Health, Blue Ridge Orthopaedics, Edgefield and Saluda DHEC Home Health, Greenwood DHEC Home Health, Hospice of the Foothills, Interim Healthcare, Oconee Memorial Hospital, and OMH Home Health.

OMH Home Health's Sylvia McCollum said, "The courses were outstanding. Judy is very knowledgeable on all the subject matter and promotes an informal atmosphere that facilitates the learning process."

Palmetto Vital Care will be providing another three day continuing education seminar in February 2003 with the same nurse educator, Judy White. Dates, times, and course schedule to be announced.

Stacy Garrett

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