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Vancomycin-Intermediate *Staphylococcus aureus* in a French Hospital

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Low-level vancomycin resistance was described recently in clinical isolates of methicillin-resistant *Staphylococcus aureus* (MRSA) in Japan and the United States. The first clinical isolate of MRSA with reduced susceptibility to vancomycin has been reported from Limoges, France.

In November 1995, blood cultures and a central line from a 2-year-old girl admitted to hospital for leukemia grew an MRSA strain (LIM-1) that was susceptible to vancomycin (minimum inhibitory concentration [MIC] 2 mg/L. Treatment with vancomycin 35 mg/kg daily and amikacin 15 mg/kg daily for 10 days was not effective. The fever continued, and the patient developed a purulent discharge from the central-line site. Teicoplanin 10 mg/kg daily and amikacin 15 mg/kg was given daily for 18 days. During the first 2 days of teicoplanin therapy, an *S aureus* strain intermediately resistant to vancomycin (VISA) was isolated from blood cultures. This strain (LIM-2) had stable low-level resistance to vancomycin (MIC=8 mg/L) by the agar dilution method and cross-resistance to teicoplanin (MIC=16 mg/L) and was susceptible only to pristinamycin and trimethoprim-sulfamethoxazole.

Culture of the purulent discharge also yielded a VISA isolate (LIM-3). Teicoplanin plus amikacin was not successful. The fever continued, the patient developed secondary localizations (pleural effusion, subcutaneous abscess), and, 15 days later, blood cultures again grew the VISA strain (LIM-4). Successful treatment consisted of drainage of purulent discharges and administration of the investigational antimicrobial agent quinupristin plus dalfopristin for 10 days. The LIM-2 strain was negative for *van*A, *van*B, *van*C1, *van*C2, and *van*C3 on polymerase chain reaction amplification of DNA. Pulse-field gel electrophoresis of *Sma*I restriction digestions from all susceptible and resistant isolates revealed an identical pattern, suggesting that the VISA isolate was selected from the previously vancomycin-susceptible MRSA strain LIM-1.

Emergence of VISA strains generally occurs in patients on multiple courses of vancomycin. For this child, however, neither previous episodes of *S aureus*-associated infections nor vancomycin therapy were reported. This emergence of VISA strains emphasizes the importance of prudent use of antimicrobial and infection control measures to reduce the incidence of VISA strains and to prevent their transmission.

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