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Drugs for MRSA with Reduced Susceptibility to Vancomycin

The recent *Medical Letter* article on vancomycin dosing and monitoring¹ briefly mentioned use of an alternative antibiotic for treatment of methicillin-resistant *Staphylococcus aureus* (MRSA) with reduced susceptibility to vancomycin. Some readers have asked for more information on this subject.

REDUCED SUSCEPTIBILITY TO VANCOMYCIN —

Microbiology laboratories generally report isolates of MRSA as "susceptible" to vancomycin when the minimum inhibitory concentration (MIC) is \leq 2 mg/L. Recent guidelines suggest considering an alternative antibiotic when the MIC is \geq 2 mg/L.²

ALTERNATIVES TO VANCOMYCIN — For complicated skin or soft tissue infections caused by MRSA with reduced susceptibility to vancomycin, either daptomycin (Cubicin) or linezolid (Zyvox) would be a reasonable choice. Linezolid, which is available for both oral and IV use, is bacteriostatic and may not be effective for treatment of endocarditis; it is not recommended for use in catheter-associated bacteremias. Linezolid can cause bone marrow suppression, particularly if it is used for more than 10 days.

When bacteremia is present, especially when it is due to right-sided endocarditis, daptomycin, which is given IV, would be a better choice, unless the patient has concomitant pneumonia (daptomycin is inactivated by surfactant). Daptomycin is rapidly bactericidal, but some *S. aureus* strains with decreased susceptibility to vancomycin have decreased susceptibility to daptomycin as well.

Other drugs that may be effective against some strains of MRSA include **quinupristin-dalfopristin** (Synercid), which causes thrombophlebitis and has substantial potential for adverse drug interactions, and **tigecycline** (Tygacil), which achieves only low serum concentrations and is bacteriostatic. Another alternative is **trimethoprim-sulfamethoxazole** (Bactrim,

Septra, and others), but experience with its use in serious MRSA infections is limited.

- Vancomycin dosing and monitoring. Med Lett Drugs Ther 2009; 51:25.
- M Rybak et al. Therapeutic monitoring of vancomycin in adult patients: a consensus review of the American Society of Health-System Pharmacists, the Infectious Diseases Society of America, and the Society of Infectious Diseases Pharmacists. Am J Health-Syst Pharm 2009; 66:82.

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