

[Monitoring serum vancomycin concentrations in the treatment of Staphylococcus infections in children.]

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INTRODUCTION: Vancomycin is the cornerstone of therapy against methicillin-resistant Staphylococcus in both community- and hospital-acquired infections. Monitoring vancomycin concentration is essential to prevent over- or underdosing of pediatric patients. However, only initial trough vancomycin concentrations may be needed to optimize dosages. The optimal ratio of the trough serum level to the minimal inhibitory concentration (MIC) should be equal to or greater than 8 in severe infections. **OBJECTIVES:** The aim of this study was to analyze the initial trough serum levels of vancomycin obtained from pediatric patients treated with vancomycin for suspected or confirmed Staphylococcus infections in combination with MIC determination. **PATIENTS:** We reviewed the medical records of 3759 children aged, more than 1 month, and 358 neonate patients during a period of 10 years in Robert-Debré Hospital, Paris. **METHODS:** Serum levels were determined using the polarization fluorescence method. MIC was determined using the E-test method. **RESULTS AND CONCLUSION:** Of the 3759 children studied, 55% had a trough serum level less than 10mg/L and 24% had greater than 15mg/L. Of the 358 neonates, 43% had a trough serum level less than 10mg/L and 31% greater than 15mg/L. Among these children, 425 had documented Staphylococcus bacteremia with vancomycin MIC determination. Determining the trough level concentration in infected pediatric patients remains mandatory to optimize the vancomycin regimen. The ratio of the trough serum level to MIC was less than 4 in 50% of the patients and more than 10 in 5% of the patients.

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