Shared health Soins communs Manitoba

CLINICAL PRACTICE CHANGE

Vancomycin Monitoring and Result Interpretation

Background Information:

- No Peak reference ranges are available. Trough serum vancomycin concentrations are the most accurate and practical method for monitoring efficacy.
- Vancomycin serum trough concentrations of 15 - 20 mg/L are recommended to improve penetration, increase the probability of obtaining optimal target serum concentrations and improve clinical outcomes in aggressive management of complicated infections. Complicated infections are those associated with endocarditis, osteomyelitis, meningitis and hospital acquired pneumonia caused by Staphylococcus aureus.
- Vancomycin serum trough concentrations of 10 -15 mg/L are recommended for prosthetic valve endocarditis caused by Staphylococci, which is typically combination antimicrobial therapy.
- There is limited data supporting the safety of sustained trough concentrations of 15 - 20 mg/L.
- Clinical judgment should guide the frequency of trough monitoring when the target trough is 15 to 20 mg/L.
- Frequent monitoring (more than one trough before the fourth dose) for short course or lower intensity dosing (to attain target trough concentrations below 15 mg/L) is not recommended.
- All patients on prolonged courses of vancomycin (exceeding three to five days) should have at least one steady-state trough concentration obtained no earlier than at steady state following the fourth dose), and then repeated as deemed clinically appropriate.
- The definition of vancomycin-induced nephrotoxicity is a reminder that monitoring creatinine is a part of TDM for vancomycin.

Change in Test Procedure:

- Vancomycin trough reference intervals have been update to 15 - 20 mg/L.
- Vancomycin trough toxic levels have been update to ≥ 28 mg/L.
- Vancomycin will be phoned as a critical result for values ≥ 28 mg/L.
- The comment below is now is provided with each trough results:

  "Serum trough of 15–20 mg/L are recommended to improve penetration, increase the probability of optimal target plasma level and improve clinical outcomes in aggressive management of complicated infections. Alternative ranges may be used for managing other infections but in general levels should be > 10 mg/L."

Shared health Soins communs Manitoba

CLINICAL PRACTICE CHANGE

Vancomycin Monitoring and Result Interpretation

References/Resources:

- Martin JH, Norris R, Barras M, 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. Clin Biochem Rev. 2010;31(1):21-4.
- Baddour, L. M., Wilson, W. R., Bayer, A. S., et al. Infective Endocarditis. Circulation, 2005, Vol. 111. https://doi.org/10.1016/j.emc.2018.06.002

Patient Impact:

- Improved appropriate monitoring.

System Improvements:

- Standardize patient monitoring based on evidence.

More information:

Please see Shared Health Lab Information Manual (LIM) Vancomycin page at https://apps.sbgh.mb.ca/labmanual/test/view?seedId=1526

DSM Contacts:

Dr. Curtis Oleschuk, Clinical Biochemist

Dr. Abdi Sokoro, Clinical Biochemist
Tel: 204-578-2187 email: asokoro@sharedhealthmb.ca