Dec 2022

New adult vancomycin trough target is coming to town !!

Question? Call 604-417-8921

https://aspires.vch.ca/

Antimicrobial Stewardship Programme:
Innovation, Research, Education, and Safety
Quality and Patient Safety, Vancouver Coastal Health

ASPIRES smart prescribing

Vancouver CoastalHealth
Promoting wellness. Ensuring care.

1. **Why are we changing the target trough now?**
    - Vancomycin trough concentrations between 15-20 mg/L are no longer recommended due to:
        - increased risk of acute kidney injury
        - lack of clinical benefit
    - This change is endorsed by Provincial Antimicrobial Stewardship Clinical Expert (PACE), our local antimicrobial stewardship group (ASPIRES), ID physicians and pharmacists
2. **What is our local MRSA's minimum inhibitory concentration (MIC)?**
    - Generally around 1mg/L, generally never above 2
3. **What concentration do we need for therapeutic killing in general?**
    - 4-5 times MIC (10mg/L will be 10X for most MRSA)
4. **Why did the old guidelines recommend targeting 15-20mg/L?**
    - There were theoretical concerns such as MIC creep which current literature has proven to be not a concern.
5. **When are vancomycin trough levels indicated?**
    - When the treatment duration is greater than 7 days
        - e.g. MRSA bacteremia, infective endocarditis, osteomyelitis
    - When the treatment duration is greater than 72 hours WITH risk factors for altered volume of distribution/clearance
        - unstable renal function/on dialysis
        - age >65, obesity, pregnancy, septic shock, burn patient, cystic fibrosis, low body weight
    - Patient not responding to therapy
6. **Will the dosing nomogram, PPOs and PowerPlans be updated?**
    - Yes, it will likely take a few months to complete

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Initial dosing

Total Body Weight	Loading Dose	Maintenance Dose
kg	20mg/kg	15mg/kg
40-50	1000mg	750mg
51-60	1250mg	1000mg
61-70	1250mg	1000mg
71-80	1500mg	1250mg
81-90	1750mg	1250mg
91-100	2000mg	1500mg

DOSE CAPPING: Vancomycin is a water soluble drug. While volume of distribution increases with body weight, it does not increase proportionately in obesity (increased lipid compartment). So a DOSE CAP of **3000mg for the loading dose** and **4500mg/day for maintenance** is recommended for the initial dosing, with further dosing guided by therapeutic drug monitoring.

Initial dosing interval (hours)

Serum Cr (mcmol/L)	Age Group (years)					
	20-29	30-39	40-49	50-59	60-69[a]	70-79[a]
40-60	8	8	12	12	12	18
61-80	8	12	12	12	18	18
81-100	12	12	12	18	18	18
101-120	12	12	18	18	18	24
121-140	12	18	18	18	24	
141-160	18	24	24	24		
161-180	24	24				
181-200	24					
Above 200						

a. In elderly patients with low muscle mass, use clinical judgement as SCr may not reflect renal function accurately

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