3.20: Miscellaneous Antibacterials- Glycopeptides

Vancomycin is a glycopeptide commonly used to treat MRSA.

**Indications:** Vancomycin is a popular glycopeptide that is active against gram-positive bacteria. Vancomycin is commonly used to treat serious or severe infections when other antibiotics are ineffective or contraindicated, including those caused by MRSA.

**Mechanism of Action:** Glycopeptides are a class of medications that inhibit bacterial cell wall synthesis.

**Special Administration Considerations:** It is poorly absorbed from the GI tract, so it must be given by IV to treat a systemic infection. Oral vancomycin, on the other hand, is used to treat antibiotic-associated clostridium difficile (C-diff). Vancomycin poses a significant risk to kidney function and hearing; therefore, patients’ trough levels must be monitored carefully for effective IV dosing to avoid complications. Patients receiving IV vancomycin may also experience a complication known as “red man syndrome” in which they experience a flushing of the skin and a reddish rash on the upper body when the infusion is administered too rapidly.

**Patient Teaching/Education:** Patients should be counseled to take medications as directed for the full course of antibacterial therapy. They should monitor for side effects such as hypersensitivity, tinnitus, hearing loss, and vertigo. Patients should promptly follow-up with their healthcare provider if no improvement in symptoms is identified.

Now let’s take a closer look at the medication grid on vancomycin in Table 3.20.

<table>
<thead>
<tr>
<th>Class/Subclass</th>
<th>Prototype/Generic</th>
<th>Administration Considerations</th>
<th>Therapeutic Effects</th>
<th>Side/Adverse Effects</th>
</tr>
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Miscellaneous Antibacterials: vancomycin
Glycopeptides

Check for allergies
Route: IV but PO for C-diff
Obtain culture prior to administering first dose
Dosage adjustment is required for renal impairment
Monitor trough levels
IV should be administered in a diluted solution over a period of 60 minutes or more to avoid rapid-infusion-related reactions

Monitor for systemic signs of infection:
- WBCs
- Fever
Monitor actual site of infection for improvement
Monitor and report trough levels for targeted dosing

Nephrotoxicity
Ototoxicity

C-diff can occur up to 2 months after therapy ends
Red-man syndrome can occur if drug is infused too rapidly. Signs and symptoms include maculopapular rash on face, neck, trunk, and limbs and pruritus and hypotension caused by histamine release. Stop infusion and contact provider. Prepare to administer diphenhydramine 50mg IV or PO. Monitor BP closely; IV fluids and/or vasopressors may be required if hypotensive. Infusion may be restarted at a slower rate after rash and itching resolve

Critical Thinking Activity 3.20a

Using the above grid information, consider the following clinical scenario question:

A nurse is caring for a patient who was prescribed vancomycin IV for a MRSA infection. The dose of medication is due now, but a trough level is not yet available in the chart. What is the nurse’s next best response?

Note: Answers to the Critical Thinking activities can be found in the “Answer Key” sections at the end of the book.

1. uCentral from Unbound Medicine. https://www.unboundmedicine.com/ucentral