**Safety of Vancomycin Dosing and AUC-Guided Dose Adjustments in Pediatric Patients**

**At the completion of this activity, pharmacists will be able to:**

1. Describe appropriate vancomycin usage in pediatric patients
2. Discuss the 2020 guideline for vancomycin treatment of methicillin resistant *Staphylococcus aureus*(MRSA) infections for pediatric patients
3. Describe vancomycin-induced acute kidney injury and how it affects vancomycin dosing and monitoring recommendations for pediatric patients

Pharmacist Questions

1. **What is an important difference between the 2009 and the 2020 guideline for vancomycin monitoring dose adjustments?**
	1. Hepatic dysfunction adjustments
	2. Addition of pediatric recommendations to the guideline
	3. The removal of AUC-guided adjustments in the 2020 guidelines
2. **What is the AUC goal for pediatric patients for the treatment of MRSA infections in pediatric patients?**
	1. 50 mg·h/L
	2. 400 mg·h/L
	3. 900 mg·h/L
3. **What is the most likely mechanism of nephrotoxicity from vancomycin administration?**
	1. Direct renal tubular damage through oxidative stress
	2. Direct hepatic damage through CYP450 enzymes
	3. Indirect renal tubular damage through elevated transaminase levels
4. **Patients should only receive vancomycin treatment for less than \_\_\_\_\_ days if clinicians want to prevent nephrotoxicity.**
	1. 60 days
	2. 5 days
	3. 30 days
5. **In the updated guideline, what is the absolute maximum recommended total daily dose of vancomycin for pediatric patients?**
	1. 23 mg/day
	2. 3600 mg/day
	3. 8000 mg/day
6. **In which population in pediatrics should prescribers consider a loading dose?**
	1. Hepatic dysfunction
	2. Obese patients
	3. Adolescent patients
7. **What serum trough level is appropriate for pediatric patients with renal dysfunction?**
	1. 2mg/L
	2. 100 mg/L
	3. 12 mg/L
8. **Concomitant administration of the following medications may contribute to increased incidence of nephrotoxicity when combined with vancomycin:**
	1. Contrast dye, amphotericin B, vasopressors, and furosemide
	2. Furosemide, acetaminophen, melatonin, and ascorbic acid
	3. Amphotericin B, loratadine, acetaminophen, and epinephrine
9. **Which of the following patients need closer monitoring for serum trough levels to maintain therapeutic concentrations of vancomycin in pediatric patients?**
	1. Hypertensive
	2. Obese
	3. Adolescent
10. **Development of AKI is positively correlated to \_\_\_\_\_\_\_\_\_ of vancomycin**.
	1. Intravenous administration
	2. > 1 g every 12 h administration
	3. Higher cumulative dose