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Pharmacist's Letter
Hospital

Consider the Best Role for Vancomycin AUC Dosing

Questions about vancomycin AUC dosing continue to crop up.

Aiming for a trough of 15 to 20 mg/dL is a surrogate for obtaining an AUC over 400 mg*hr/L...which is the goal for efficacy.

But directly using an AUC goal of 400 to 600 mg*hr/L is linked to less acute kidney injury...likely from less vancomycin exposure.

For example, about 60% of patients can achieve an AUC over 400 mg*hr/L with a trough below 15 mg/dL...or even less than 10 mg/dL.

Now hospitals are determining how to incorporate AUC dosing...which can pose logistical and financial challenges.

Plus AUC data are only in serious MRSA infections.

Consider using vancomycin AUC dosing for serious MRSA infections (bacteremia, etc). AUC data don't include CNS infections...but trough data in these patients are limited too.

It's still too soon to say what's the best way to monitor vancomycin in patients with NONserious MRSA (cellulitis, etc)...or non-MRSA infections (coagulase-negative *Staph*, etc).

Work with colleagues to decide how to approach these patients.

For example, some hospitals are sticking with trough-only dosing in non-MRSA infections...since AUC goals aren't established.

But other hospitals are using AUC dosing for most indications. Some expect that, if it works for serious infections caused by an invasive pathogen like MRSA, it will work for other organisms too.

Don't adjust the AUC goal of 400 to 600 mg*hr/L for nonserious cases. There aren't good data to use a lower goal.

When using AUC, choose the calculation method that works best for your team based on resources, ease, etc.

There's no proof that using Bayesian calculators (*InsightRx*, *ClinCalc*, etc) leads to better outcomes than non-Bayesian calculators (*VancoPK*, etc)...or an *Excel* spreadsheet using first-order kinetics.

But keep in mind, Bayesian dosing doesn't require steady state levels...and some Bayesian calculators are free online.

Generally get 2 levels. Bayesian software has an option for one level...but some data suggest this may not be as accurate.

Order post-dose levels with at least one half-life in between...such as a peak and then a random or trough. But it's okay to use 2 levels with a dose in between if levels are at steady state.

Continue to check vancomycin random levels in patients with unstable kidney function...or pre-dialysis levels if on hemodialysis.

Get our resource, *Vancomycin Dosing and Monitoring for Adults*, for more calculating the AUC, how to adjust doses, etc.

Key References:

-Pharmacotherapy. 2022 Sep;42(9):741-753
-Am J Health Syst Pharm. 2020 May 19;77(11):835-864

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-https://sidp.org/Vancomycin-AUC-Implementation-Toolkit-Guide (10-25-22)
-Pharmacotherapy. 2022 Apr;42(4):284-291
-Ann Pharmacother. 2022 Aug 18. doi: 10.1177/10600280221117256

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