

0610 - Follow-up and Update

Hi and good morning all,

Here is an follow-up / update to the calculator! Feedback and questions welcomed!

Regards,

Kurt

Question 1:

"Can we prevent any maintenance doses > 4500 mg/day from showing as options on the maintenance dose table?"

Background

ASHP REPORT

Loading Doses Summary and recommendations:

12. A vancomycin loading dose of 20 to 25 mg/kg using actual body weight, with a maximum dose of 3,000 mg, may be considered in obese adult patients with serious infections (B-II). Initial maintenance doses of vancomycin can be computed using a population PK estimate of vancomycin clearance and the target AUC in obese patients. Empiric maintenance doses for most obese patients usually do not exceed 4,500 mg/day, depending on their renal function (B-II). Early and frequent monitoring of AUC exposure is recommended for dose adjustment, especially when empiric doses exceed 4,000 mg/day (A-II). Measurement of peak and trough concentrations is recommended to improve the accuracy of vancomycin AUC estimation and maintenance dose optimization in obese patients, aligning with recommendations 2 and 5 for nonobese adults.

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Dosing in Obesity

tenance dose.^{112,120,122} For example, studies report an average vancomycin CL of approximately 6 L/h in obese patients that equates to achieving an AUC of approximately 500 mg-h/L with a daily dose of 3,000 mg. Empiric vancomycin maintenance dosages above 4,500 mg/day are not expected in obese adults, because vancomycin CL rarely exceeds 9 L/h.^{112,120,121}

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- For the doses greater than 4500 mg/day, I had been thinking about ways to cue the user that 4.5g/day was a threshold. It looks like there are 6 possible dosing regimens that could be selected that pass that threshold.
- I'm not sure if it should be a `hard stop` vs. a `soft stop`. For a hard stop, the pharmacist would not be able to select a regimen > 4.5g/day. I was thinking there may be valid cases where that type of regimen is the appropriate regimen, so I was trying to figure out a soft stop way.

Thoughts

1. Changed font of regimens > 4.5g/day to red instead of the normal black color.
2. Alert in red becomes visible when a dose that is greater than 4.5 g/day is presented to the pharmacist in the maintenance dose table.
3. Total daily dose in grams is always presented to pharmacist even if checkbox isn't selected.

Maintenance Dose Table

Infusion Rate: 1000 mg/hr * Target: AUC/MIC range 400-600 MIC: 0.1 - 1.0

	750mg	1000mg	1250mg	1500mg	1750mg	2000mg	
	0.8 hrs	1 hr	1.2 hrs	1.5 hrs	1.8 hrs	2 hrs	<input checked="" type="checkbox"/> infusion times
Q6H		400 13	510 17 5 g				mg h / L mg/dL
Q8H				460 14	550 16 5.2 g		mg h / L mg/dL
Q12H						420 10	mg h / L mg/dL
Q18H							mg h / L mg/dL
Q24H							mg h / L mg/dL
Q36H							mg h / L mg/dL
Q48H							mg h / L mg/dL

PK Parameters
Population-based
 Vd: 91 L
 Ke: 0.116
 t1/2: 6 hrs
 CLVanco: 10.6 L/hr

☒ Estimated trough
☐ Total Daily Dose (TDD)
☐ dosing in mg/kg
☐ Show all values
[*View AUC Calculation Steps](#)

* AUC calculations are estimated and rounded to nearest 10's.

** Total daily doses > 4.5g have been correlated with a higher incidence of AKI

* Click inside the blue box to view steps!

1

For the dosing regimens that exceed 4.5g per day, changed the font to red.

3

Total daily dose in grams is always presented to pharmacist even if checkbox isn't selected.

2

Added red font alert to display if any of those values are presented to the pharmacist

Question 2:

Question 2: "Add Skin and soft tissue infections (ABSSSI), surgical prophylaxis Enterococcal infections, Staphylococcus Epidermidis infections, to the exclusions on the landing page?"

- Updated Landing Page
- Worried about how it looks and also added categories to the right. Worried about language used.

Cerner (Default) ▼

⚙️

Default Settings: Add/Edit Profile

*Clinical calculators similar to this one are to assist healthcare professionals in making complex decisions. This calculator is a tool to be used in combination with clinical judgement, not as a stand alone one-size-fits all depot for dosing

Vancomycin AUC Calculator

New Consult

Post-Levels

Patient View

Patient List

AUC

MIC

Exclusions

- Hemodialysis, CRRT, AKI/Unstable Renal Function (Renal)
- UTI, Skin and soft tissue infections (ABSSSI), Surgical Prophylaxis (non-AUC)
- Enterococcal infections, Staphylococcus Epidermidis (non-MRSA Infections)

Question 3:

Question 3: "I wanted to clarify, we should the user hit "save".
Will the calculator intermittently save the information without "saving"?"

1. Each time the pharmacist presses the "Next" button, information about the patient is written into the database.
2. The "Save" button manually saves the patient information.

Cancel

<< Back

Next >>

Save

Load Patient Information

+

▼

Load

1

Each time the pharmacist presses the "Next" button, information about the patient is saved.

2

The "Save" button saves the patient's information manually.