

LHS Pharmacy Vancomycin Adult Dosing Protocol

Patients excluded from this protocol:

1. Patients with ESRD or CrCl <30ml/min
(Dose these patients with 15mg/kg (TBW) and check serum trough level 3-7 days later to ensure trough remains >5-16)
2. Actual body weight <50kg or >130kg (calculate patient specific dose using LHS pharmacy website dosing calculator)
3. Hypermetabolic state e.g. burn and trauma cases. (calculate patient specific dose, consider peak/trough levels)
4. Pediatric patients
5. **Patients requiring higher trough levels of 15-20 (e.g. MRSA pneumonia, meningitis, or shunt infection)**
 - a. Use AP kinetics program to individualize dosing
 - b. Obtain both peak and trough levels to avoid toxicity
6. Home Infusion patients who require longer dosing intervals (e.g. q24h)

For Home Infusion patients:

- a. Convert inpatients to longer dosing interval as soon as possible while an inpatient
- b. Utilize "Vanco Initial Dosing" calculator (global RPh) on LHS pharmacy website. Insert patient data with a goal peak of <40 and trough of 10-15 in order to calculate a dose with a longer interval. Adjust the calculated dose as needed to obtain a reasonable dose (round dose, convenient interval) with an appropriate peak/trough.
- c. Obtain peak and trough levels once at steady state prior to patient discharge if possible.
- d. Obtain SrCr and Vanco Trough level at least weekly.

Inpatient Dosing: $(140 - \text{age})(\text{IBWkg}) \times (0.85 \text{ if female})$

1. Calculate CrCl ml/min = $(72)(\text{SrCr})$
2. Select dose from chart using CrCl and patient's weight in KG (use total body weight)

Monitoring:

1. Monitor—SrCr (at least weekly), temp, WBC/bands, culture results, patient status
2. Continue to follow SrCr after vancomycin DC'd if signs of renal impairment
3. Order serum drug levels if necessary once patient at steady state per recommendations below. All patients must have at least one trough level per week if on therapy > 7 days.
4. Interpret Serum trough level
 - a. Desired target range 5-16 for empiric therapy and most indications
 - If level within target range and renal function stable-continue present dose.
 - If level <5, increase dose / decrease interval as appropriate
 - If level >16, increase interval / decrease dose as appropriate
5. Order an additional trough concentration(s) at steady state if dose adjustment made and therapy is continued.

Serum Levels NOT required if: All patients must have at least one trough level per week if on therapy > 7 days.

1. Empiric therapy lasting <5 days.
2. Treatment >5 days but clearly improving by parameters in "1" above, and has stable renal function.
3. Postoperative prophylactic therapy (no documented infection)

Obtain Trough vancomycin level if: (after 3rd consecutive dose, or as need determines)

1. On concomitant potentially nephrotoxic therapy (aminoglycoside, amphotericin B, cyclosporine, NSAID'S, aggressive diureses with Loop Diuretic, Contrast Agent, Cisplatin, etc)
2. Unstable/deteriorating renal function, or significantly improving renal function.
3. Patient requires doses higher than those on the dosing table
4. Vancomycin treatment >5 days and not improving
5. Patients expected to be on long-term therapy (>7 days)
6. Stable Critically ill patients
7. Serious enterococcal, MRSA, endocarditis, osteomyelitis infection.
8. Toxicity suspected secondary to vancomycin therapy

Obtain Peak and Trough levels if patient is:

1. Unstable, critically ill
2. Requiring high trough levels for adequate therapy

References

Karem CM et al. Outcome Assessment of Minimizing Vancomycin Monitoring and Dosing Adjustments. Pharmacotherapy 1999;19:257-267.

Cantu TG et al. Serum Vancomycin Concentrations: Reappraisal of Their Clinical Value. *Clinical Infectious Diseases* 1994;18:533-43.

Raber SR et al. Monitoring Serum Vancomycin Concentrations. *Infections in Medicine* 1995; 12(1):48-51.

Moellering RC. Editorial: Monitoring Serum Vancomycin Levels: Climbing the Mountain Because It Is There? *Clinical Infectious Diseases* 1994;18:544-546.

VANCOMYCIN DOSING TABLE

CrCl ml/min	30	40	50	60	70	80	90	100	110
50kg*	500mg q24H (28/14)	750mg q24h (35/15)	750mg q24h (31/11)	1000mg q24h (38/11)	500mg q12h (26/13)	500mg q12h (24/11)	750mg q12h (34/14)	750mg q12h (32/12)	750mg q12h (31/10)
55kg*	500mg q24h (25/13)	750mg q24h (32/14)	1000mg q24h (38/13)	1000mg q24h (35/10)	500mg q12h (24/12)	750mg q12h (33/15)	750mg q12h (31/13)	1000mg q12h (38/15)	1000mg q12h (36/13)
60kg*	500mg q24h (23/12)	750mg q24h (29/12)	1000mg q24h (35/12)	1000mg q24h (32/9)	750mg q12h (33/16)	750mg q12h (30/14)	750mg q12h (28/12)	1000mg q12h (35/13)	1000mg q12h (33/12)
65kg*	750mg q24h (32/16)	1000mg q24h (36/15)	1000mg q24h (32/11)	1500mg q24h (44/13)	750mg q12h (30/15)	750mg q12h (28/13)	1000mg q12h (34/14)	1000mg q12h (32/12)	1000mg q12h (31/11)
70kg*	750mg q24h (30/15)	1000mg q24h (34/14)	1000mg q24h (30/10)	1500mg q24h (41/12)	750mg q12h (28/14)	1000mg q12h (34/16)	1000mg q12h (32/13)	1000mg q12h (30/12)	1000mg q12h (29/10)
75kg*	750mg q24h (28/14)	1000mg q24h (31/13)	1000mg q24h (28/10)	1500mg q24h (38/11)	750mg q12h (26/13)	1000mg q12h (32/15)	1000mg q12h (30/13)	1000mg q12h (28/11)	1000mg q12h (27/9)
80kg*	750mg q24h (26/13)	1000mg q24h (29/12)	1500mg q24h (39/14)	1500mg q24h (36/10)	1000mg q12h (33/16)	1000mg q12h (30/14)	1000mg q12h (28/12)	1000mg q12h (26/10)	1000mg q12h (25/9)
85kg*	750mg q24h (25/13)	1000mg q24h (28/12)	1500mg q24h (37/13)	1500mg q24h (34/10)	1000mg q12h (31/16)	1000mg q12h (28/13)	1000mg q12h (26/11)	1500mg q12h (37/14)	1000mg q8h (30/15)
90kg*	1000mg q24h (31/16)	1000mg q24h (26/11)	1500mg q24h (35/12)	1500mg q24h (32/9)	1000mg q12h (29/15)	1000mg q12h (27/12)	1000mg q12h (25/10)	1500mg q12h (35/13)	1000mg q8h (28/14)
95kg*	1000mg q24h (29/15)	1000mg q24h (25/10)	1500mg q24h (33/11)	1500mg q24h (30/9)	1000mg q12h (28/14)	1000mg q12h (25/12)	1000mg q12h (24/10)	1500mg q12h (33/13)	1000mg q8h (27/14)
100kg*	1000mg q24h (28/14)	1000mg q24h (24/10)	1500mg q24h (31/11)	1000mg q12h (29/16)	1000mg q12h (26/13)	1000mg q12h (24/11)	1500mg q12h (34/14)	1000mg q8h (27/15)	1000mg q8h (25/13)
105kg*	1000mg q24h (27/14)	1500mg q24h (34/14)	1500mg q24h (30/10)	1000mg q12h (28/15)	1000mg q12h (25/13)	1000mg q12h (23/11)	1500mg q12h (32/13)	1000mg q8h (26/14)	1000mg q8h (24/12)
110-130kg*	1000mg q24h (25/13)	1500mg q24h (32/14)	1500mg q24h (29/10)	1000mg q12h (26/15)	1000mg q12h (24/12)	1500mg q12h (33/15)	1000mg q8h (27/15)	1000mg q8h (25/13)	1000mg q8h (23/12)

***use Total Body Weight**

numbers in parentheses are the estimated peak/trough