Hackettstown Regional Medical Center

HRMC MEDICATION CONCENTRATION POLICY

TITLE: **AMINOGLYCOSIDE (GENTAMICIN, TOBRAMYCIN, AMIKACIN) & VANCOMYCIN PEAK, TROUGH, AND RANDOM CONCENTRATION DETERMINATION**

EFFECTIVE DATE: 4/11/93	**Policy #: PN.08a**	**PAGE: 1 OF 2**
REVIEW: 9/04, 9/05, 2/06, 5/06, 9/07, 9/08, 9/09 **REVISION 9/04, 2/06, 5/06, 5/12,5/14**	**CREATED BY: R. Thelin, Pharm.D.** **REVISED BY: R. Thelin, PharmD**	**DISTRIBUTION: Nursing; Pharmacy; Laboratory**

1. **Preliminary Lab Work**
   A. Serum creatinine and BUN within 4 days **before**, or 24 **after** initiation of therapy.
   B. Cultures if necessary from appropriate site of infection **prior** to beginning therapy.

2. **Scheduling of Lab Work**
   Refer to Pharmacist-Entering Vancomycin, Aminoglycoside levels (LAB)
   \\Hrmcnwfp1\data1\SHARED\PHARMACY\Clinical pharmacist\2012_08_08 Pharmacist Enter Lab Orders.pdf

3. **Drawing of Blood Levels**
   A. All orders for Vancomycin or Aminoglycosides require a concentration to be ordered as directed in this protocol. Any physician can revise or order additional concentrations.
   Always administer dose as ordered after trough. Do NOT hold dose until level is obtained

ANTIBIOTIC	REQUIRED	*Only if ordered*
VANCOMYCIN	**Trough Concentration**: Drawn immediately (≤ 30 minutes*) before the fourth dose.* [Administer 4th dose as ordered]	**Random Concentration**: With daily (AM) lab draw, unless otherwise specified (i.e. before dialysis; in x hrs)
AMINOGLYCOSIDES EXTENDED-INTERVAL (≥ q24H)	**Random Concentration:** Drawn 10 hours after the ***Start*** *of* the first dose infusion (see nomogram)	**Trough Concentration**: Drawn immediately (≤ 30 minutes*) before the fourth dose* [Administer 4th dose as ordered]
AMINOGLYCOSIDES CONVENTIONAL DOSE (< q24H)	**Trough Concentration:** Drawn immediately (≤ 30 minutes) *before the fourth dose* [Administer 4th dose as ordered] **Peak Concentration:** (IV): Draw 30min after 30min infusion (IM): Draw 60min after injection *after fourth dose*	

   B. For TROUGH levels: The next dose is given **as scheduled**, **after** the blood draw. When the results of the trough are known adjustments in dosing interval can then be made.
   C. If the Serum Creatinine increases or decreases by > 1 while on therapy, draw trough with every 4th dose.
   D. If Serum Creatinine does NOT change by > 1, draw further troughs weekly.

4. **Follow-up Lab work**
   BMP to be done every 48 hours while on therapy.

TITLE: **AMINOGLYCOSIDE (GENTAMICIN, TOBRAMYCIN, AMIKACIN) & VANCOMYCIN PEAK, TROUGH, AND RANDOM CONCENTRATION DETERMINATION**

EFFECTIVE DATE: 4/11/93	Policy #: PN.08a	PAGE: 2 OF 2
REVIEW: 9/04, 9/05, 2/06, 5/06, 9/07, 9/08, 9/09 REVISION 9/04, 2/06, 5/06, 5/12,5/14	CREATED BY: R. Thelin, Pharm.D. REVISED BY: R. Thelin, PharmD	DISTRIBUTION: Nursing; Pharmacy; Laboratory

5. Report Results

Results of laboratory studies are accessible in Cerner. Critical levels are called as per policy.

6. Monitoring Results

A. Primary physician (or consulting ID physician) to be contacted by nurse or pharmacist if:

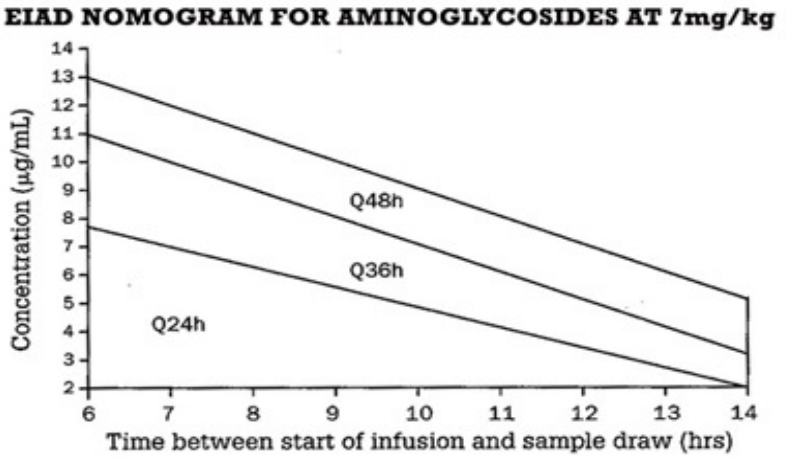
1. Serum creatinine level increases during treatment by ≥50% or change of a value > 1 of pre-treatment level.

2. Vancomycin trough concentration >[20mcg/ml] or <[10mcg/ml]

3. Aminoglycoside trough concentrations:
   Gentamicin or Tobramycin >[2mcg/ml];
   Amikacin >[8mcg/ml]

4. Aminoglycoside peak concentrations: (only if <q24h [q8h,q12h, etc])
   Gentamicin or Tobramycin <[4mcg/mL] or >[10mcg/mL];
   Amikacin <[12mcg/mL] or >[30mcg/mL]

5. Aminoglycoside random concentrations: (dosing usually based on ABW)
   For frequencies ≥24h, suggested to use EIAD nomogram (below). Concentration should be taken at 10 hours after *start* of FIRST infusion. Frequency for future doses should be based on level obtained.



B. Pharmacy to contact primary/ infectious diseases physician and discuss treatment plan if a dose adjustment does not occur within 24hrs after levels reported as outlined above.

Reviewed and Approved by:
Pharmacy and Therapeutics Committee; Infection Control; Laboratory; Nursing Practice Council
Pharmacy and Therapeutics Committee 5/14