

HRMC MEDICATION CONCENTRATION POLICY

TITLE: THERAPEUTIC MEDICATION MONITORING DRAW TIMES		
EFFECTIVE DATE: 04/14/2004	Policy #: PN.08b	PAGE: 1 OF 2
REVIEW: 9/04, 9/05, 9/06, 9/07, 7/08, 9/09, 7/10	CREATED BY: R. Thelin, PharmD, Sylvia Bokich,	DISTRIBUTION: Nursing; Pharmacy; Laboratory
REVISION: 9/04, 7/08, 7/10, 5/12	REVISED BY: R. Thelin, PharmD, P. Ashworth, Lab	

This policy standardizes the time, in relation to dose, of blood draw for concentration monitoring of medications which have standardized concentration reference values. Reference values are based on HRMC laboratory measures, and are to be used a guide only.

MEDICATION	HALF-LIFE	DRAW TIME	REF	DRAW TIME	REF
Aminoglycosides: AMIKACIN GENTAMICIN TOBRAMYCIN	2-3 hrs	[Trough]: ≤ 30 min prior to next dose	< 8 mcg/ml < 2 mcg/ml	[Peak]: IV: 30 min post end of infusion IM: 60 min post dose	15-30 mcg/ml 4-10 mcg/mL
CARBAMAZEPINE	25-45 hrs	[SS]: ≤ 60 min prior to next dose	4-12 mg/L		
CYCLOSPORINE	6-24 hrs	[SS]: PO: ≤ 60 min prior to next dose	95-210 µg/L	[SS]: IV cont. infusion: anytime post 72 hours	
DIGOXIN	36-48 hrs	[SS]: IV: ≥ 6 hrs post dose IM/PO: ≥ 8 hrs post dose	0.5-2 µg/L		
LAMOTRIGINE	25-33 hrs	[SS]: ≤ 60 min prior to next dose	3-14 µg/mL		
LEVETIRACETAM	6-8 hrs	[SS]: ≤ 60 min prior to next dose	5-30 µg/mL		
LITHIUM	8-24 hrs	[SS]: 12 hrs post dose	0.6-1.6 mEq/l		
OXCARBAZEPINE	8-12 hrs	[Trough, SS]: ≤ 60 min prior to next dose	6-10 µg/mL	[Peak]: 4-6 hrs post dose	
PHENOBARBITAL	96 hrs	[SS]: ≤ 60 min prior to next dose	15-40 mcg/ml		
PHENYTOIN (& FOSphenytoin)	18-22 hrs	[SS]: ≤ 60 min prior to next dose	(TOTAL: 10-20 µg/mL) (FREE: 1-2 µg/mL)	[Peak]: IV/IM: 2-4 hrs post loading dose	
Adjusted Phenytoin concentration = measured phenytoin level / (0.2 x albumin concentration) + 0.1.					
PRIMIDONE	8-15 hrs	[SS]: ≤ 60 min prior to next dose	5-12 mcg/ml		
PROCAINAMIDE	3-6 hrs	[SS]: ≤ 60 min prior to next dose	4-10 mcg/ml	NAPA (metabolite)	6-20 mcg/ml
QUINIDINE	6-8 hrs	[SS]: ≤ 60 min prior to next dose	2 to 6 µg/mL		
TACROLIMUS	8-16 hrs	[SS]: ≤ 60 min prior to next dose	5-15 µg/L		
THEOPHYLLINE (& aminophylline)	3-9 hrs	[SS]: PO: ≥ 8 hrs post dose or ≤ 60 min prior to next dose IV cont. infusion: anytime post 24 hrs	10-20 mcg/mL	[Peak]: IV: 30 min post end of infusion PO: 2 hrs (IR) 5 hrs delayed rel.	
VALPROIC ACID	9 hrs	[SS]: ≤ 60 min prior to next dose	50-100 mcg/ml		
VANCOMYCIN	4-6 hrs	[Trough]: ≤ 30 min prior to next dose	10-20 mcg/ml	[Random]: draw time as ordered	10-20 mcg/mL

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MEDICATION	HALF-LIFE	MONITOR	REF	DRAW TIME	TX RANGE	NOTES
ARGATROBAN	0.5-1 hrs	aPTT	21-36 sec	2 hrs after initiation or dose change, then q24h	66-103 sec	May increase INR
ENOXAPARIN	4.5-7 hrs	Anti-Xa	< 0.1 Iunit/mL	4 hours after SubQ inj	0.50-1.2 0.3-0.7 IUnit//mL.	Therapeutic Prophylactic
HEPARIN	1-2 hrs	aPTT	21-36 sec	6 hours after rate change	66-103 sec	
WARFARIN	20-60 hrs	PT/ INR	0.8-1.1 (INR)	>6 hours after dose	2-3 2.5-3.5	Higher INR for Mechan Valves

Estimated half-lives are based on normal adults with unimpaired renal or liver function.
After 3-5 half-lives of dosing, the medication is considered to be at Steady-State [SS].

For suspected toxicity, samples may be drawn at anytime.