

VCUHS Anticoagulant Monitoring Recommendations

Drug	Drug Effect	Recommended Monitoring Assay	Assays Available from VCUHS Coagulation Laboratory	Assays Available from Reference Laboratories	Additional Information
Apixaban (Eliquis)	FXa inhibitor	Calibrated anti-factor Xa (anti-FXa), calibrated dilute PT. Quantitative analysis by liquid chromatography mass spectrometry (LC/MS)	None	Quest Diagnostics, anti-FXa (94223) LabCorp, anti-FXa (504385) LabCorp, LC/MS (117085)	No routine monitoring requirement. Prolongs PT/INR and aPTT, no effect on thrombin time or fibrinogen
Argatroban (Acova)	Direct thrombin inhibitor	Activated clotting time (ACT) Quantitative analysis by liquid chromatography mass spectrometry (LC/MS)	None	LabCorp, LC/MS (117099)	Prolongs ACT/aPTT, PT/INR and thrombin time. No effect or factitiously low fibrinogen.
Bivalirudin (Angiomax)	Direct thrombin inhibitor	Activated clotting time (ACT)	None	None	Prolongs ACT/aPTT, PT/INR and thrombin time. Factitiously low fibrinogen.
Dabigatran (Pradaxa)	Direct thrombin inhibitor	Hemoclot Thrombin Inhibitor assay, ecarin clotting time or dilute thrombin time Quantitative analysis by liquid chromatography mass spectrometry (LC/MS)	None	Quest Diagnostics, anti-FXa (91115) LabCorp, LC/MS (117076)	Prolongs PT/INR, aPTT, and TT at therapeutic doses. No effect or factitiously low fibrinogen.
Edoxaban (Savaysa)	FXa inhibitor	Calibrated anti-FXa Quantitative analysis by liquid chromatography mass spectrometry (LC/MS)	None	LabCorp, LC/MS (117060) LabCorp, anti-FXa (504430)	Cannot be reliably monitored with standard laboratory testing. Prolongs ACT/aPTT, PT/INR, and thrombin time. No effect or factitiously low fibrinogen.

Enoxaparin (Lovenox)	LMWH, anti-thrombin and FXa inhibitor	Calibrated anti-factor Xa assay	Calibrated anti-factor Xa assay*	N/A	PT/INR and aPTT are relatively insensitive to enoxaparin and unsuitable for monitoring. Thrombin time prolonged. No effect on fibrinogen
Fondaparinux (Arixtra)	FXa inhibitor	Calibrated anti-factor Xa assay	None	Quest Diagnostics, anti-Xa (16103) LabCorp, anti-Xa (500465)	The activity of fondaparinux sodium is expressed in mg and cannot be compared with activities of heparin or low molecular weight heparins.
Heparin (UFH)	Anti-thrombin and factor Xa inhibitor	aPTT or calibrated anti-factor Xa assay	aPTT and calibrated anti-factor Xa assay*	N/A	Monitoring required. Prolonged thrombin time, fibrinogen may be factitiously low
Rivaroxaban (Xarelto)	Factor Xa inhibitor	Calibrated anti-factor Xa assay Quantitative analysis by liquid chromatography mass spectrometry (LC/MS)	None	Quest Diagnostics, anti-FXa (90981) LabCorp, LC/MS (117050)	No routine monitoring requirement. Prolongs PT/INR and aPTT, no effect on thrombin time or fibrinogen
Warfatin (Coumadin)	Vitamin K antagonist	PT/INR	PT/INR	Quest Diagnostics Coumadin, HPLC(5103) Vitamin K, HPLC (36585X) AccuType Warfarin (1610X) LabCorp Warfarin, LC/MS (071423) Pharmacogenomics, PCR (511460) Vitamin K, HPLC (121200)	Prolongs PT/INR and aPTT, no effect on thrombin time or fibrinogen

*** The anti-factor Xa assay is available for heparin (UFH) and LMWH monitoring from the VCUHS Hemostasis Laboratory according to the following schedule:**

Weekdays, Day shift (0700-1500) – Routinely available, contact laboratory (628-5755) to schedule

Weekdays, Evening shift (1500-1100) - Available with consent, contact on-call clinical pathology resident

Weekdays, Night shift (1100-0700) – Not available at present

Weekends, Day shift (0700-1500) – Available with consent, contact on-call clinical pathology resident

Weekends, Evening shift (1500-1100) - Not available at present

Weekends, Night shift (1100-0700) – Not available at present

Roger S. Riley, M.D., Ph.D., Director, Coagulation Laboratory

Sheela Pai, M.S., S.H. (ASCP), Senior Medical Technologist, Special Coagulation Laboratory

VCUHS Clinical Laboratories

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