

Memorandum

To: Regional Medical Laboratory (RML) Clients

From: Lawrence Johnson, MD, FASCP, FCAP, Chief of Hematology, Coagulation, Flow Cytometry, and Urinalysis
Lizbeth Carreiro, CLS (ASCP), Manager Hematology, Coagulation, and Flow Cytometry

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Re: Anticoagulants - their potential monitoring and the issues they present with coagulation testing

The FDA has approved several new anticoagulants; several of these anticoagulants cannot be monitored by current available methods. In addition, many of these anticoagulants interfere with current clot based functional assays.

Because coagulation work-ups (i.e. PT/PTT analyzer, Hypercoagulation Analyzer, Inhibitor Screen, Lupus Anticoagulant Analyzer, Lupus Screen) are based on and driven by these functional coagulation assays, it is important for the lab to be informed of what anti-thrombotic drug(s) each patient is on. This information is essential to allow us to provide accurate and timely results, interpretations, and diagnoses.

Anticoagulant	Anticoagulant Mechanism	Test to Monitor	Could full coag analyzer testing be performed without interference?
Rivaroxaban (Xarelto)	Factor Xa Inhibitor	None	Unknown but discouraged
Fondaparinux (Arixtra)		Referral Lab (unique anti-Xa curve)	Unknown but discouraged
Dabigatran (Pradaxa)	Direct Thrombin Inhibitor (DTI)	None	No
Argatroban (Argatroban)		None	No
Bivalirudin (Angiomax)		None	No
Desirudin (Iprivask)		None	No
Lepirudin (Refludan)		None	No
Heparin-unfractionated	Inhibition of thrombin and Factor Xa by Antithrombin (AT)	PTT or UNFRAC HEP (anti-Xa methodology)	Yes
Enoxaparin (Lovenox)	Inhibition of thrombin and Factor Xa by AT	LMWHEPARIN (anti-Xa methodology)	Yes
Warfarin (Coumadin)	Vitamin K antagonist	PT/INR	Yes

None of the anticoagulants mentioned above should interfere with molecular testing such as direct genotypic testing for the Prothrombin Gene (Factor II) mutation or direct Factor V Leiden mutation, as well as anticardiolipin or beta 2 glycoprotein testing. However, if your patients are taking anything other than the anticoagulants Warfarin (Coumadin), heparin or Enoxaparin (Lovenox), it may not be possible to accurately complete much of the coagulation testing necessary for a coagulation analyzer. Consequently, with exception to the above mentioned tests, it is highly discouraged to complete any functional coagulation testing during acute events or during therapy.

If you have any other questions or would like more information, please contact Dr. Lawrence Johnson, head of Hematology, Coagulation, Urinalysis and Flow cytometry at (918)-744-2553 or LRJohnson@sjmc.org