

Pharmacist Monitoring of Anticoagulation – Implementation of JC NPSG (3E)

The Problem

Adverse medication events pose a significant safety risk to patients requiring anticoagulant therapy. To address this safety concern, The Joint Commission (TJC) introduced National Patient Safety Goal (NPSG) 3E in 2008, requiring anticoagulant therapy be monitored in all hospitalized patients. The standard required that this goal be implemented by January 1, 2009.

Aim/Goal

To provide a safer medication practice and prevent anticoagulation-related adverse events, Clinical Pharmacists will monitor all hospitalized patients with an active order for warfarin, enoxaparin, argatroban and lepirudin. The inpatient monitoring flow sheet will provide anticoagulant-related information that can assist through the transition of care.

The Team

This project is a work-product of the BIDMC Pharmacy Department in collaboration with the BIDMC Anticoagulation Committee.

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- Stephen Maynard, CPhT
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The Interventions (Figure 1)

- Baseline and daily laboratory indices are reviewed for patients on warfarin, enoxaparin, argatroban and lepirudin.
- Changes in patient's clinical status and response to therapy are monitored daily.
- Allergies are documented and updated accordingly in the profile
- The medication profile is reviewed daily for drug-drug or drug-food interactions with warfarin.
- Nutrition orders and anticoagulant indication are also reviewed
- Interventions are made with the prescriber as required.

Progress to Date

Figure 1 - Pharmacy drug monitoring database illustrating specific data elements captured daily for each hospitalized patient on anticoagulation. Elements not shown include drug-drug or drug-food interactions and R.Ph. recommendations

Beth Israel Deaconess Medical Center - Pharmacy ** TEST SYSTEM **						
Date	08/25/08	08/26/08	08/27/08	08/28/08	08/29/08	
SiCr	0.5 MG/DL 08/25/08 @ 1442	0.4 MG/DL 08/31/08 @ 0944	0.3 MG/DL 08/27/08 @ 1824	1 MG/DL 08/28/08 @ 0257	0.4 MG/DL 08/31/08 @ 0944	
Est CrCl	87.47 ml/min	109.33 ml/min	145.76 ml/min	109.33 ml/min	109.33 ml/min	
PLT	173 K/uL 08/25/08 @ 1442	336 K/uL 08/31/08 @ 0944	182 K/uL 08/27/08 @ 1824	212 K/uL 08/28/08 @ 0257	336 K/uL 08/31/08 @ 0944	
PTT	24.1 SECONDS 08/24/08 @ 1300	24.9 SECONDS 08/28/08 @ 0257	29.4 SECONDS 08/27/08 @ 1821	24.9 SECONDS 08/28/08 @ 0257	24.9 SECONDS 08/28/08 @ 0257	
Albumin	2.7 G/DL 08/26/08 @ 0450	2.7 G/DL 08/26/08 @ 0450			2.7 G/DL 08/26/08 @ 0450	
Ionized Calcium						
INR	1.3 08/24/08 @ 1300	1.2 08/28/08 @ 0257	1.4 08/27/08 @ 1821	1.2 08/28/08 @ 0257	1.2 08/28/08 @ 0257	
Total Bilirubin			0.6 MG/DL 06/18/08 @ 0740	0.6 MG/DL 06/18/08 @ 0740	0.6 MG/DL 06/18/08 @ 0740	
Hct	30.1 % 08/25/08 @ 1442	29.9 % 08/31/08 @ 0944	28.5 % 08/27/08 @ 1824	29.8 % 08/28/08 @ 0257	29.9 % 08/31/08 @ 0944	
Hgb	10.7 G/DL 08/25/08 @ 1442	10.1 G/DL 08/31/08 @ 0944	9.5 G/DL 08/27/08 @ 1824	10.7 G/DL 08/28/08 @ 0257	10.1 G/DL 08/31/08 @ 0944	
Dose	40 mg Enoxaparin Sodium	40 mg Enoxaparin Sodium	40 mg Enoxaparin Sodium	40 mg Enoxaparin Sodium	40 mg Enoxaparin Sodium	

The pharmacy anticoagulation monitoring tool was implemented in January 2009. The monitoring tool includes current drug and lab information used by the clinical pharmacist to identify potentially harmful drug-drug interactions or sudden changes in lab parameters. The clinical pharmacists can promptly communicate such to the patient's nurse and prescriber so early intervention can be implemented before adverse events occur.

Next Steps:

Data will be collected to identify the number of pharmacist interventions made. These data will be used to estimate the number of adverse events prevented. The performance of the monitoring tool will also be assessed periodically to determine whether enhancements must be made to improve efficiency. Updates will be provided to the BIDMC Anticoagulation Committee.



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