

PROTOCOL FOR: Anticoagulation Therapy

- POLICY:**
1. The appropriate antagonist for anticoagulants used must be available on the units: (There is no specific antagonist for agent for Fondaparinux [Arixtra®].)
 - a. Vitamin K for Coumadin®
 - b. Protamine Sulfate for Heparin
 - c. Enoxaparin (Lovenox®) and Dalteparin (Fragmin®): there is no reliable reversal agent. Protamine sulfate may be administered but may not be as effective as when used with Heparin.
 2. Administration of Warfarin (Coumadin®) should be avoided during pregnancy due to the potential fetal effects of malformation and bleeding.
 3. Blood samples for coagulation studies may be drawn from venous lines or indwelling arterial lines if a sufficient volume of blood is drawn and discarded first (6 times the dead space volume of the tubing). If the line is Heparinized, contact the laboratory to determine if a Hepabsorb assay may be warranted.
 4. Heparin infusions (25,000 units / 500mls D₅W = 50 units/ml) are to be run on Alaris infusion pumps using the guardrails.
 5. Heparin infusions require verification by a second RN/LPN. Refer to procedure for Medication: Double Checks.

DESIRED PATIENT

- OUTCOMES:**
1. Patient will not experience hemorrhagic or other complications related to anticoagulant therapy.
 2. Patient will have risk for fall assessed and precautions implemented as necessary.

**CLINICAL
ASSESSMENT AND**

- CARE:**
1. Assess adequacy of circulation (patients with venous thrombo-embolism):
 - a. Assess color, sensation and movement [flexion and extension] (CSM) of all extremities at least every 12 hours or as ordered.
 - b. For checks in affected extremities in addition to CSM, palpate for temperature and peripheral pulses and note color, blanching/capillary refill, swelling and pain.
 - c. Ensure that anti-embolytic stockings or compression devices have been applied and are in use when ordered.
 2. Perform ongoing assessment for signs and symptoms of bleeding (guaiac positive stools, hematuria, epistaxis, petechiae or ecchymosis, oozing from needle punctures or around invasive devices, other sources of bleeding).
 3. Implement measures to protect from falls as per protocol for Falls:

PROTOCOL FOR: Anticoagulation Therapy

Risk Identification and Prevention Management.

4. Perform ongoing assessment for signs/symptoms of pulmonary embolism, e.g., sharp stabbing chest pain that is worse on deep inspiration or coughing, tachypnea, dyspnea, cough, hemoptysis, syncope, pallor/cyanosis, tachycardia, hypotension, desaturation on pulse oximetry or fever.
5. Monitor baseline ordered lab values (e.g., CBC, platelet count with Heparin and Enoxaparin, INR with Warfarin, PTT with Heparin, coagulation studies); report abnormal values to licensed independent practitioner (LIP).
6. Interventions for Heparin Infusion:
 - a. Prior to infusion:
 - 1) Document baseline vital signs and weight in kilograms
 - 2) Monitor baseline lab values (PTT, CBC with platelet count)
 - 3) Administer Heparin bolus - refer to electronic order set for Intravenous Heparin Therapy. Note: there are 4 standard order sets: (1) Venous Thrombosis (DVT/PE); (2) Acute Coronary Syndrome; (3) Acute Stroke; (4) Ultrafiltration.
 - 4) Initiate infusion as per Intravenous Heparin Therapy Electronic Order Set. Use appropriate heparin dosing nomogram listed in medication references.
 - b. During infusion:
 - 1) Document infusion rate every hour and adjustments based on PTT results.
 - 2) Monitor lab values as ordered (PTT/platelet count)
 - 3) Assess patient for adverse effects
 - c. After infusion:
 - 1) Monitor lab values; report abnormal values to LIP.
 - 2) Initiate oral anticoagulant therapy as ordered.

**PATIENT
TEACHING:**

1. Review with patients the symptoms to report to RN or LIP: signs of bleeding or bruising, shortness of breath, dizziness or chest pain.
2. Review activity limitations as appropriate, e.g., avoid using sharp objects, shaving with a razor with a blade or using a hard toothbrush.
3. Provide patient with educational materials - education booklets, handout, videos.
4. Patient will verbalize understanding of the rationale for

PROTOCOL FOR: Anticoagulation Therapy

anticoagulant therapy, side effects, precautions, importance of follow-up monitoring, compliance issues, dietary - consistent intake of vitamin K containing foods, and potential for adverse drug reactions and interactions.

5. Provide instruction about medication administration after discharge - frequency, route, dietary implications, precautions and importance of laboratory monitoring.
6. Verify that patient has a follow-up appointment for monitoring of anticoagulant treatment. Patients that are followed by UCHC physicians and are on Coumadin® may be referred to the anticoagulation clinic at UCHC.

REFERENCES: Hospital Anticoagulation References under Medication References on the Nursing Website (link: <http://nursing.uchc.edu/Pharmacy/index.html>):

1. Anticoagulation protocol for Heparin, Low Molecular Weight Heparin, Warfarin and Direct Thrombin Inhibitors
2. DVT Prophylaxis Guidelines
3. Heparin Dosing Protocols

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 10/07 (Created from merging of protocols for Heparin Infusion: Care of the Patient Receiving [effective 5/93; revised 1/95, 8/96, 11/97, 8/99, 9/00, 5/01] and Coumadin Therapy: Care of the Patient [effective 3/88; revised 12/90, 2/94, 3/96, 12/97, 8/99, 3/02, 9/02])

REVISION DATES: 11/07, 12/08