

Section 9	Clinical Policies	07/07/11 -Originated
Subject 9.13	General Procedures	12/06/12 -Reviewed w/ changes -Reviewed w/o changes
Policy 9.13.35 Anticoagulation Therapy		01/11/13 -Effective Pharmacy -Author

Anticoagulation Therapy

Definitions

Anticoagulant: any agent used to prevent the formation of blood clots. This class of medications is used for the prophylaxis and/or treatment of thromboembolic disorders and for these clinical purposes include:

- Injectable anticoagulants including unfractionated heparin, low molecular weight heparin (i.e., Lovenox), direct thrombin inhibitors (i.e., Argatroban, Bivalirudin) and Factor Xa inhibitors (i.e., Fondaparinux) and
- Oral anticoagulants such as warfarin

Policy

Safe and effective individualized anticoagulation therapy should be provided for all patients, in order to reduce the risk of adverse drug events.

Order sets are used as standards for all patients receiving injectable anticoagulants and should guide the provider with prescribing and monitoring parameters.

Oral warfarin therapy is specifically addressed in Department of Pharmacy Policy [07.69 Warfarin Anticoagulation](#).

Responsibilities

Physician Responsibility

Physicians should use standard order sets whenever starting or continuing full dose anticoagulation for any patient. However, if an exceptional clinical situation warrants a more individualized plan, the physician should ensure that the appropriate therapy and laboratory parameters are ordered and monitored.

Points of care to include:

1. selection of appropriate agent
2. select protocol for care
3. establish starting dose
4. establish monitoring therapy goal
5. timing and use of appropriate laboratory measures to monitor response
6. interdisciplinary coordination necessary between lab, pharmacy, nursing, medical staff and dietary
7. proper dose adjustment based on lab parameters/clinical response
8. adjust current medication therapy for drug interactions
9. transition of patient from injectable anticoagulant to warfarin
10. ensure patient education and compliance

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Responsibilities, continued

Pharmacist

1. reviews and verifies the physician’s order for appropriateness
2. patient factors (age, weight/height, allergies)
3. medical history, including use of thrombolytics, CHF, liver and renal disease.
4. current medication(s)
5. indications for usage
6. infusion - standard concentrations
7. oral - unit dose products

Nurse

1. follows Department of Pharmacy Policy 07.10 Medication Administration for administration and documentation
2. obtains a dual sign off as required for all injectable anticoagulants by Department of Pharmacy Policy 07.48 Double Check of Medications uses programmable infusion pumps for all intravenous administration of anticoagulants
3. coordinates patient education on anticoagulation
4. reviews lab values and responds to values outside of range in collaboration with the ordering physician
5. contacts other team members as required to optimize anticoagulation care
6. provides education for patients who will receive anticoagulation therapy after discharge shall include the following:
 - a. medication use
 - b. adverse drug reactions and side effects
 - c. dietary considerations
 - d. drug/alcohol interactions
 - e. administration technique (if applicable)
 - f. compliance/safety issues
 - g. importance of follow up monitoring

Nutritional Services

1. provides additional patient education on drug/food interactions
2. coordinates meal plan while patient is hospitalize

Laboratory

1. provides lab results via EPIC for all healthcare providers
2. maintains turnaround time on lab reporting per policy
3. clinical outcome data reported and reviewed
4. critical values are specifically addressed in Department of Pathology Policy 7.01.05 Reporting Critical Values

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Ongoing Monitoring

UTMB evaluates its anticoagulation safety practices, takes appropriate action to improve its practices, and measures the effectiveness of those actions on a regular basis. Below are anticoagulation outcomes that are regularly monitored”

Order Set related:

1. Labs required in approved order sets
2. Percent of patients on heparin drip who achieve therapeutic PTT within 24 hours of initiation
3. monitoring therapeutic Heparin usage via approved order sets
4. monitoring of INR prior to dispensing warfarin

5. Warfarin patient education including: the importance of follow-up compliance, drug-food interactions and potential for adverse drug reactions

Adverse Event Monitoring:

1. Protamine sulfate use outside of OR and cath lab
2. Medication errors related to the anticoagulation process via Adverse Drug Event Committee.
3. postoperative PE or DVT within 30 days of discharge

Other:

1. Venous Thromboembolism (VTE) prophylaxis while hospitalized
2. Outpatient PT and INRs (measured as percent in range)
3. Volume usage for alternative anticoagulation

References

Order Sets:

Ambulatory

- [\(ANTI-COAGULATION, INITIAL \[26014\]\)](#)
- [\(ANTI-COAGULATION, FOLLOW UP \[26015\]\)](#)

Inpatient

- [\(UTMB IP ACS/MCA NO RENAL FAILURE \[522\]\)](#)
- [\(UTMB IP ACS/MCA RENAL FAILURE \[521\]\)](#)
- [\(UTMB IP DVT/PE NO RENAL FAILURE \[523\]\)](#)
- [\(UTMB IP DVT/PE RENAL FAILURE \[524\]\)](#)
- [\(UTMB IP REVERSAL ANTICOAG \[525\]\)](#)
- [\(UTMB IP HEM ARGATROBAN WEIGHT-BASED DOSING FOR HIT \[3000090\]\)](#)
- [IP ANTICOAGULATION DISCHARGE ORDERS \(3004003\)](#)