

ED OBSERVATION UNIT: DEEP VEIN THROMBOSIS PROTOCOL NYC H+H KINGS COUNTY HOSPITAL CENTER

General Observation Guidelines apply for all ED observation patients.

INCLUSION CRITERIA

- Confirmed lower or upper extremity DVT
- No procedural intervention necessary

EXCLUSION CRITERIA

- Extensive thrombosis (e.g. extending to IVC or above ileofemoral bifurcation)
- Planned thrombolysis or embolectomy
- Planned placement of IVC filter
- Limb threatening (e.g. evidence of limb ischemia, arterial insufficiency, compartment syndrome, phlegmasia cerulea dolens, etc)
- Overlying or superimposed infection or gangrene
- Active bleeding or high risk for bleeding (HASBLED >3 or clinician judgment using attached table)
- Psychosocial barriers to home anticoagulation treatment (i.e. inability to self-administer anticoagulant or lack of necessary social support)
- New or recurrent DVT while already compliant on anticoagulation (e.g. prior DVT/PE, atrial fibrillation, prosthetic heart valve)
- Anticipate initiating bridging therapy to warfarin (because it takes 5 days to bridge)
- Known or suspected thrombophilia (e.g. factor V Leiden, antithrombin III deficiency, protein C/S deficiency, prothrombin mutation)

INTERVENTIONS

- Initiate full-dose anticoagulation with LMWH.
- Initiate or transition to DOAC therapy if feasible.
- Monitor for bleeding complications (ie. bleeding gums, hematuria, GI bleed)
- Rx for LMWH/DOAC (confirm pharmacy availability and insurance coverage of selected agent)
- Patient education (lovenox self-administration teaching if needed, bleeding risks and complications, signs/symptoms of pulmonary embolism)
- Care management and/or social work consult

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Reviewed by Bobak Zonnoor MD, Raymond Beyda MD, Rajesh Verma, MD

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DISPOSITION	
Home: <ul style="list-style-type: none"> ● Resolution of initial barriers to discharge ● Patient education complete ● Rx confirmed received and covered by insurance at patient's pharmacy ● Appropriate outpatient follow-up 	Admission: <ul style="list-style-type: none"> ● Clinical deterioration ● Bleeding complication ● Need for initiation of coumadin

Table 3—Independent Risk Factors for Bleeding in 10,866 Hospitalized Medical Patient¹⁰

Risk Factor ^a	Total Patients, No. (%) (N = 10,866)	OR (95% CI)
Active gastroduodenal ulcer	236 (2.2)	4.15 (2.21-7.77)
Bleeding in 3 mo before admission	231 (2.2)	3.64 (2.21-5.99)
Platelet count < 50 × 10 ⁹ /L	179 (1.7)	3.37 (1.84-6.18)
Age ≥ 85 y (vs < 40 y)	1,178 (10.8)	2.96 (1.43-6.15)
Hepatic failure (INR > 1.5)	219 (2.0)	2.18 (1.10-4.33)
Severe renal failure (GFR < 30 mL/min/m ²)	1,084 (11.0)	2.14 (1.44-3.20)
ICU or CCU admission	923 (8.5)	2.10 (1.42-3.10)
Central venous catheter	820 (7.5)	1.85 (1.18-2.90)
Rheumatic disease	740 (6.8)	1.78 (1.09-2.89)
Current cancer	1,166 (10.7)	1.78 (1.20-2.63)
Male sex	5,367 (49.4)	1.48 (1.10-1.99)

Data shown were obtained by multiple logistic regression analysis for characteristics at admission independently associated with in-hospital bleeding (major bleeding and clinically relevant nonmajor bleeding combined). GFR = glomerular filtration rate; INR = international normalized ratio.

^aAlthough not specifically studied in medical patients, one would also expect dual antiplatelet therapy to increase the risk of bleeding.

Sources

1. American College of Emergency Physicians Clinical Policies Subcommittee on Thromboembolic D, Wolf SJ, Hahn SA, et al. Clinical Policy: Critical Issues in the Evaluation and Management of Adult Patients Presenting to the Emergency Department With Suspected Acute Venous Thromboembolic Disease. *Ann Emerg Med.* 2018;71(5):e59-e109.
2. Mazzolai L, Aboyans V, Ageno W, et al. Diagnosis and management of acute deep vein thrombosis: a joint consensus document from the European Society of Cardiology working groups of aorta and peripheral vascular diseases and pulmonary circulation and right ventricular function. *Eur Heart J.* 2018;39(47):4208-4218.
3. Kearon C, Akl EA, Ornelas J, et al. Antithrombotic Therapy for VTE Disease: CHEST Guideline and Expert Panel Report. *Chest.* 2016;149(2):315-352.

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