

evidence based guidelines

MANAGEMENT OF ANTICOAGULANTS THERAPEUTIC BRIDGING

Pre-Procedure Planning Considerations

Patients taking warfarin for whom therapeutic bridging is recommended include the following:

- Mechanical valve in the mitral position AND any of the following: multiple prior strokes, prior perioperative stroke, prior valve thrombosis
- Caged ball or tilting disc valve in the aortic or mitral position
- Recent (<3 months) ischemic stroke (or TIA) AND any of the following: atrial fibrillation, prior stroke (or TIA), hypertension, diabetes, congestive heart failure, or age > 75 years.
- Atrial fibrillation with either CHA₂DS₂-VASc* score ≥ 7 OR rheumatic valvular heart disease
- Venous thromboembolism (deep venous thrombosis or pulmonary embolus) with any of the following:
 - Having occurred within the last 3 months
 - Deficiency of protein C, protein S, or antithrombin
 - Homozygous for factor V Leiden, prothrombin gene mutation, or double heterozygous for each mutation
 - Multiple thrombophilias
 - Anti-phospholipid antibodies
 - In the presence of high-risk cancer (pancreatic, myeloproliferative, primary brain cancer, gastric, esophageal)

For patients at lower risk of thrombotic events, interruption of warfarin without bridging is recommended (see "Interruption for Elective Procedures" protocol).

For procedures with a very low-risk for bleeding (dental, cutaneous, endovascular, or upper gastrointestinal endoscopy without dilation) it is recommended that patients continue warfarin without interruption.

The protocol below is specific for patients on warfarin. Bridging is not necessary for patients on newer oral anticoagulant agents (e.g. Xarelto, Pradaxa, Eliquis).

* CHA₂DS₂-VASc score = **+1 point EACH for:** age 65-74, female, HTN, CHF, DM, Vascular disease
+2 points EACH for: age ≥75, h/o stroke or thromboembolism

Patient Education

- No doses of warfarin starting 5 days prior to date of procedure
- On the 3rd day prior to procedure begin enoxaparin SC at 1 mg/kg per dose
 - Every 12 hours for patients with creatinine clearance of 30 ml/min or greater
 - Every 24 hours for patients with creatinine clearance of <30 ml/min
- The last dose of enoxaparin before procedure should be given:
 - No sooner than 24 hours prior to procedure
 - Using 0.5mg/kg if creatinine clearance is <30 ml/min
- Restart enoxaparin doses no sooner than 24 hours after procedure and only once hemostasis has been established. Continue enoxaparin until INR is at or above desired therapeutic threshold (usually 3-5 days).
- If the patient is to restart warfarin after the procedure, restart their usual daily dosage of warfarin on the evening of the day of the procedure (assuming hemostasis has been established).

NOTE: For patients at risk for recurrent deep venous thrombosis consider using protocol above but substitute an enoxaparin dose of 40mg SC once daily (reduce to 30mg once daily if creatinine clearance <30 ml/min).