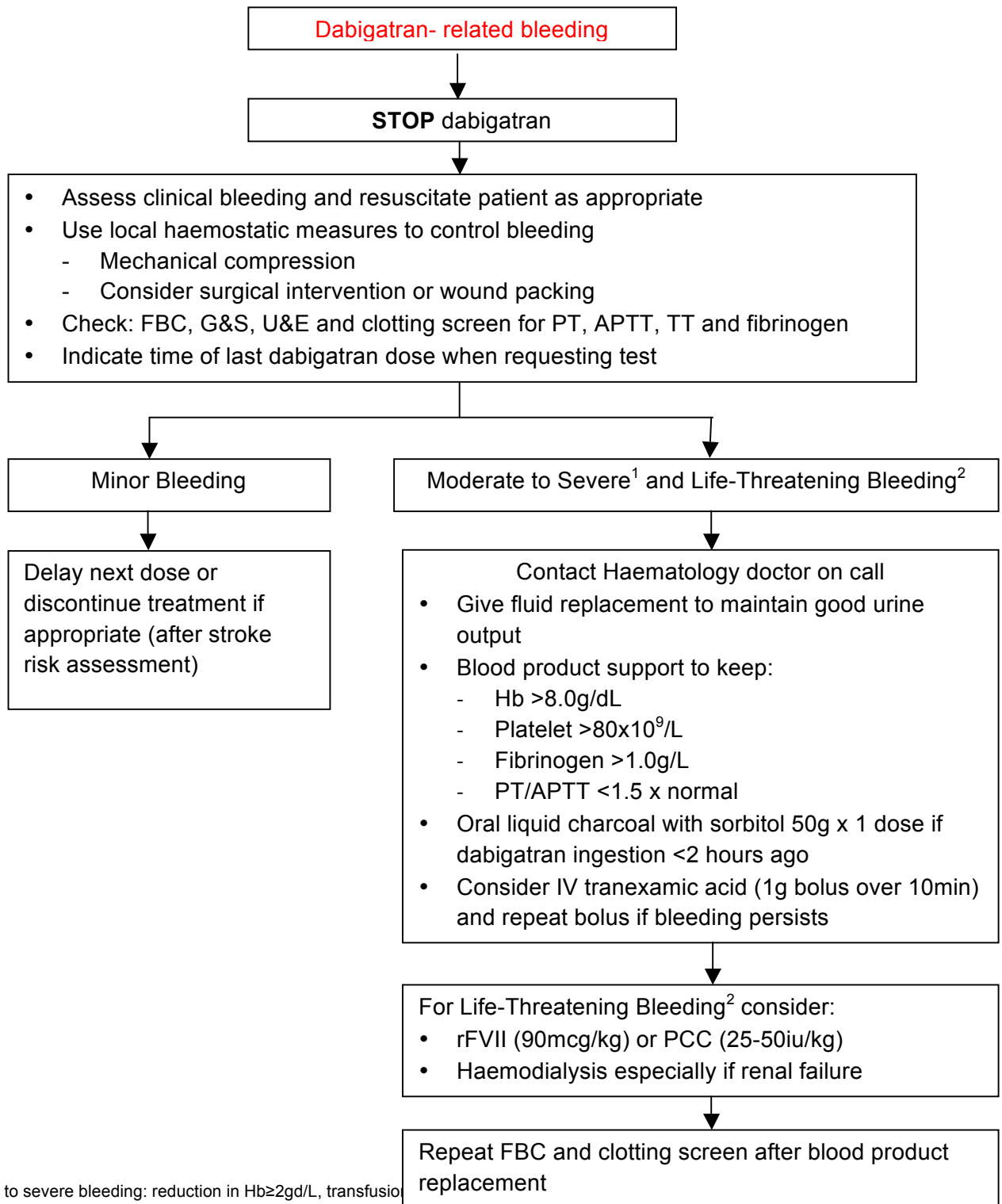


Guidelines for management of bleeding with dabigatran

- Dabigatran is an oral direct thrombin inhibitor that has a plasma half life of 12-17 hours
- Dabigatran is mostly (80%) excreted by the kidneys and as such appropriate diuresis must be maintained in order to promote adequate drug clearance
- There is **NO REVERSAL** agent for dabigatran



¹Moderate to severe bleeding: reduction in Hb \geq 2gd/L, transfusion of \geq 4 units of red cells, symptomatic intracranial, intraspinal, intramuscular with compartment syndrome, retroperitoneal, intraarticular or pericardial bleeding).

²Life-threatening bleeding: symptomatic intracranial bleed, reduction in Hb \geq 5gd/L, transfusion of \geq 4 units of red cells, hypotension requiring inotropic agents or bleeding requiring surgical intervention.

Guidelines for perioperative management of dabigatran

Clearance of dabigatran in patients with renal insufficiency may take longer. This should be considered in advance of any procedures with renal function being checked at the pre-admission clinic and the patient being given clear instructions about when to stop dabigatran treatment. The table below summarises discontinuation rules before invasive or surgical procedure.

Renal function (eGFR in ml/min)	Estimated half life (hours)	Stop dabigatran before elective surgery	
		Standard risk	High risk of bleeding or major surgery
≥80	13	24 hours before	2 days before
≥50 - <80	15	1-2 days before	2-3 days before
≥30 - <50	18	2-3 days before (>48 hours)	4 days before

If an acute intervention is required, dabigatran should be temporarily discontinued. A surgery / intervention should be delayed if possible until at least 12 hours after the last dose. If surgery cannot be delayed the risk of bleeding may be increased. The risk of bleeding should be weighed against the urgency of the intervention. Where urgent life-saving surgery cannot be delayed contact the haematology doctor on call in relation to measures to control bleeding prior to and during surgery.

Spinal anaesthesia / epidural anaesthesia / lumbar punctures

Procedures such as spinal anaesthesia may require complete haemostatic function. The risk of spinal or epidural haematoma may be increased in cases of traumatic or repeated puncture and by the prolonged use of epidural catheters. After removal of a catheter, an interval of at least 2 hours should elapse before the administration of the first dose of dabigatran. These patients may require frequent observation for neurological signs and symptoms of spinal or epidural haematoma.

Re-starting dabigatran after surgery

The appropriate time to re-start dabigatran after surgery will be determined by the nature of the surgery, the urgency for restarting thromboprophylaxis and the haemostatic state of the patient. In elective situations where the wound is stable and haemostasis is achieved it is suggested that the patient receives a single dose that evening with the usual daily dose commenced the following day.

Patients at risk of bleeding or patients at risk of over-exposure, notably patients with moderate renal impairment (eGFR 30-50 ml/min), should be treated with caution. Resume treatment after complete haemostasis is achieved.

Reference

Van Ryn et al. Dabigatran – a novel reversible, oral direct thrombin inhibitor: Interpretation of coagulation assays and reversal of anticoagulant activity. thrombosis

Summary of Product Characteristics for Pradaxa <http://www.medicines.org.uk/EMC/medicine/24839/SPC/Pradaxa+150+mg+hard+capsules/>

Conversion from warfarin to dabigatran

When converting patients from warfarin therapy to dabigatran, discontinue warfarin and start dabigatran when the INR is below 2.0 (this usually occurs 3-5 days after discontinuing warfarin when a patient has been stable in INR range 2-3).

Conversion from dabigatran to warfarin

When converting from dabigatran to warfarin, adjust the starting time of warfarin based on creating clearance as follows:

- For CrCL ≥ 50 ml/min, start warfarin 3 days before discontinuing dabigatran
- For CrCl ≥ 30 - < 50 ml/min, start warfarin 2 days before discontinuing dabigatran
- For CrCl ≥ 15 - < 30 ml/min, start warfarin 1 day before discontinuing dabigatran
- For CrCl < 15 ml/min: not recommended

Because dabigatran can contribute to an elevated INR, the INR will better reflect warfarin's effect after dabigatran has been stopped for at least 2 days.

Conversion from parenteral anticoagulants to dabigatran

For patients currently receiving a parenteral anticoagulant (e.g. LMWH), start dabigatran 0-2 hours prior to the time that the next dose of the parenteral drug was to have been administered or at the time of discontinuation of a continuously administered parenteral drug (e.g. intravenous unfractionated heparin).

Conversion from dabigatran to parenteral anticoagulants

For patients currently taking dabigatran, wait 12 hours before initiating treatment with a parenteral anticoagulant

Reference:

Summary of Product Characteristics for Pradaxa <http://www.medicines.org.uk/EMC/medicine/24839/SPC/Pradaxa+150+mg+hard+capsules/>