

Clinical Guideline

Perioperative bridging of warfarin in adult patients undergoing elective surgery

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Owner	Oncology and Haematology and Cellular Pathology
Author	Professor Beverley Hunt, Consultant in Haematology Rebecca Chanda, Senior Pharmacist Anticoagulation Caroline Broadbent, Principal Pharmacist for Surgery, GI and Acute Pain
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Relevant external law, regulation, standards	

Change History		
Date	Change details, since approval	Approved by
Sep 2013	Enoxaparin switch to dalteparin	DTC

Key:
CrCL- creatinine clearance
UFH - unfractionated heparin
VTE - venous thromboembolism

(A) Low risk:

- Target INR 2.0-3.0 **unless** VTE with:
 - active cancer – intermediate risk
 - VTE within last 3 months - intermediate risk
 - VTE within last 6 weeks - high risk: ideally avoid surgery, consider use of temporary IVC filter
- non valvular AF target INR 2.0-3.0 **unless**:
 - TIA/CVA within the last 3 months (ideally avoid surgery) - intermediate risk

(B) Intermediate risk:

- DVT/PE target INR 2.0 - 3.0 but VTE 6-12 weeks ago
- Valvular AF (even if INR target 2.0 - 3.0)
- TIA/CVA within the last 3 months (ideally avoid surgery)

(C) High risk:

- VTE within the last 6 weeks – ideally avoid surgery, consider use of temporary IVC filter
- Any indication with target INR 3.0 - 4.0, unless mechanical cardiac valves when very high risk

(D) Very high risk:

- Mechanical cardiac valves

(E) Bridging therapy in renal failure:

- Refer to table F for prophylactic dalteparin dosing in renal failure and box H for anti-Xa level testing
- Refer to table G for treatment dalteparin dosing in renal failure and box H for anti-Xa level testing

(F) Prophylactic dalteparin dosing

Weight	CrCL > 30mL/minute Prophylaxis	CrCL<30mL/minute Prophylaxis - see (H)
30-39 kg	2500 units OD	1250 units OD
40-49 kg	2500 units OD	2500 units OD
50-99 kg	5000 units OD	2500 units OD
100-139kg	7500 units OD	5000 units OD
140-179kg	5000 units BD	5000 units OD
>180kg	Seek Haematology Advice	

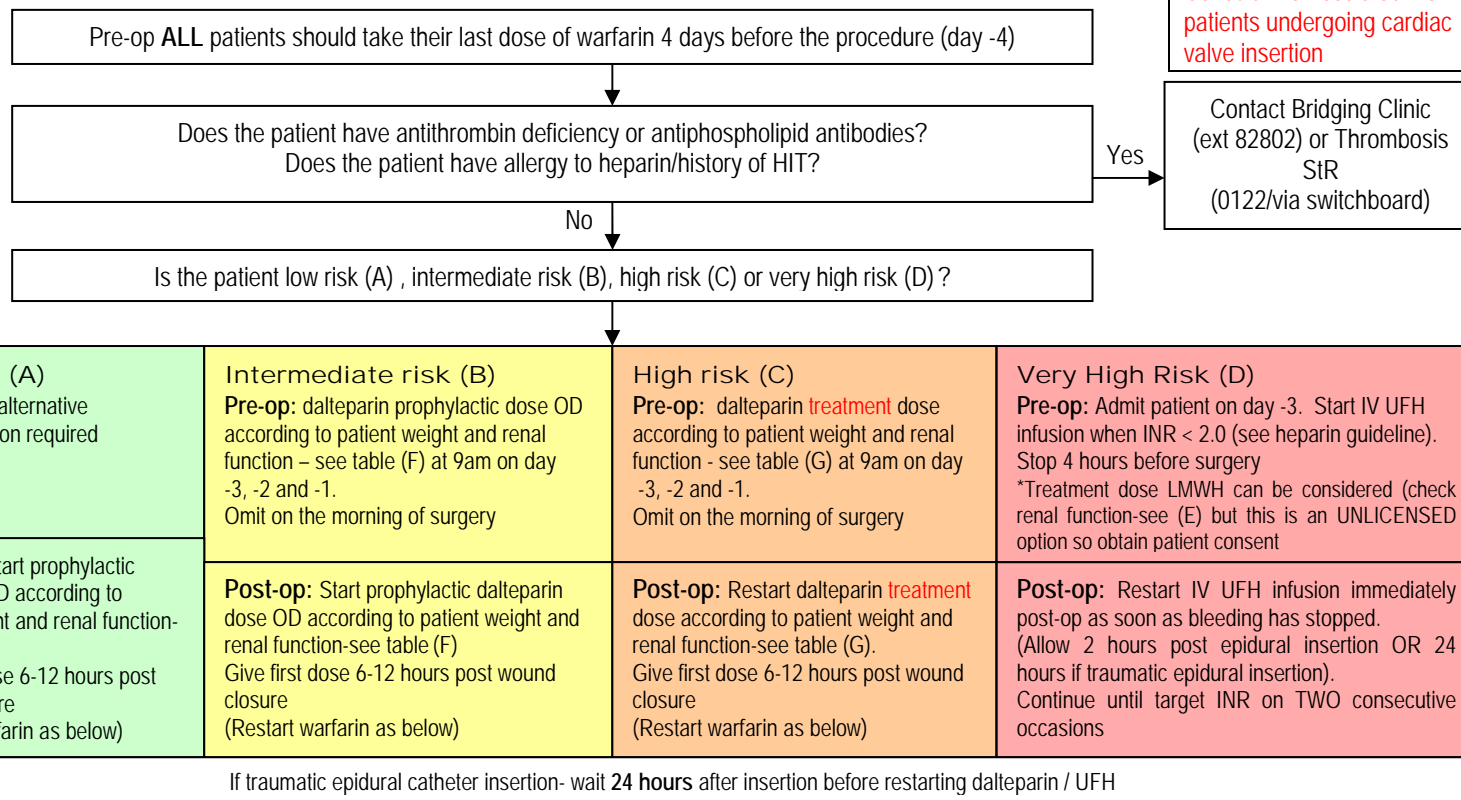
(G) Treatment dalteparin dosing

Weight	CrCL >30mL/minute Treatment 200 units/kg	CrCL<30mL/minute 140 units/kg - see (H)
Wt <46 kg	7500 units OD	5000 units OD
46-56 kg	10 000 units OD	7500 units OD
57-68 kg	12 500 units OD	10 000 units OD
69-82 kg	15 000 units OD	10 000 units OD
>83 kg	18 000 units OD (dose capped)	12 500 units OD

When in doubt seek advice from Bridging Clinic (ext 82802) or Thrombosis StR (bleep 0122)

Perioperative Bridging of Warfarin in Adult Patients Undergoing Elective Surgery

Consult Thrombosis StR for patients undergoing cardiac valve insertion



Note: If the patient has renal failure (eg: CrCL < 30 mL/min)
-See Bridging therapy in renal failure (E)

Continue Subcut dalteparin (as in- or out-patient) until discharge, or oral anticoagulant re-started and INR in range

Continue Subcut dalteparin / (as in- or out-patient) or IV UFH (as in-patient) until oral anticoagulant re-started and INR in range on two consecutive occasions

(H) Anti-Xa level testing in renal failure (SEND ON ICE)

- Dalteparin levels can accumulate in renal failure over time.
- Check anti-Xa levels if there are concerns about bleeding or bruising after 7 days of dalteparin.
- If trough (pre-dose) anti-Xa level is >0.2 international units/mL, please discuss with Thrombosis StR (bleep 0122 / switchboard)

Re-starting oral anticoagulant

If there is no excessive bleeding (and epidural catheter has been removed), ideally restart on the evening of surgery (obtain surgical consultant/ StR approval first) once oral intake established.

Providing INR less than 1.5, restart with a loading dose of 1.5 x patient's usual dose for 3 days, then continue on usual dose (e.g. a patient who usually takes warfarin 5 mg, should receive 7.5 mg for 3 days and then continue on 5 mg).

If INR more than 1.5, contact clinical pharmacist / Thrombosis StR for advice

Note: If any medications that interact with warfarin have been started/stopped during admission contact ward pharmacist for advice as usual maintenance dose may need altering.

Refer to local anticoagulation clinic within 3 days of discharge if only one INR in range pre discharge; within 5 days if two consecutive INR's in range