Dalteparin bridging for patients taking warfarin

This is guidance:

If you are unsure please ring anticoagulation on x 4006 or bleep 1413 (working hours) or email: anticoagulation.service@salisbury.nhs.uk.

More complex patients or those with more than one high risk indication, should be discussed with a consultant haematologist. email: shc-tr.haemenquiries@nhs.net for generic consultant haematology/anticoag queries.

Please photocopy the patient's dosage information leaflet/INR record, to include the target range and file in the healthcare record.

Is it considered safe to do the procedure with the patient on warfarin?

Yes → Continue. Check INR is within required limits

No

Stop warfarin 5 days before procedure

Is the patient at high risk from withdrawal of anticoagulation

Yes

Confirm no allergy to heparin

Check FBC, U+Es, LFTs & INR and make a note that you have checked it on the relevant pre-op document

Check eGFR >30 and platelets >100x10^9/l

Dalteparin bridging

No

All other patients are at low risk from withdrawal of anticoagulation. Low risk patients do not need prophylactic dalteparin pre-procedure. Assess the patient for risk of VTE and prescribe post-procedure prophylactic dalteparin accordingly.

No? - discuss with anaesthetist or haematologist

Patients at high risk from withdrawal of anticoagulation

Heart valve

- Rheumatic valvular heart disease
- Mechanical mitral valve
- Mechanical aortic valve (including bileaflet) with one of the following risk factors: AF, prior stroke/TIA, hypertension, diabetes, heart failure, age >75 years)

AF - Calculate the CH A_2D S_2VA Sc score – bridging required for score > 4

	Risk Factor	Score
C	Congestive heart failure / Left ventricular dysfunction	1
H	Hypertension - high blood pressure	1
A_2	Age ≥75	2
D	Diabetes mellitis	1
S_2	Stroke / TIA / TE	2
V	Vascular disease - coronary artery disease (CAD), myocardial infarction, peripheral artery disease (PAD) or aortic plaque	1
A	Age 65 - 74	1
Sc	Female gender	1

VTE

Recurrent VTE

Single VTE and severe thrombophilia (antithrombin deficiency, antiphospholipid syndrome)

NB. if DVT <3 months defer surgery or consider IVC filter if this is not possible

Stroke/embolism

Recurrent stroke or embolism

Stroke/TIA < 3 months

Cardiac failure

With cardiac aneurysm +/- thrombus

Pre procedure:

- check patient's INR record when you photocopy it.
  - If the control is good, stop 5 days pre procedure
  - If INR >4 consider stopping warfarin earlier
- start therapeutic dalteparin 3/7 pre procedure
- last pre procedure dose of therapeutic dalteparin >24 hrs (i.e. before 09:00 preceding day).
- fill out clotting screen request form for the day of surgery and file in the healthcare record
- complete and give patient the warfarin bridging patient information leaflet

Actual body weight Kg	Dalteparin dose (units)
under 46	7500 once daily
46 - 56	10000 once daily
57 - 68	12500 once daily
69 - 82	15000 once daily
83 and over	18000 once daily
> 110kg	You may wish to give a higher dose although this is unlicenced d/w haematologist or anticoag clinic. See Dalteparin policy

See over for day of procedure guidance

Day of surgery/procedure

Morning of procedure:
- Check clotting screen, review by anaesthetist
- Ensure mechanical prophylaxis applied if appropriate (and continued until full mobility).

Post surgery/procedure

Post procedure: High risk patients
(those patients who were bridged with therapeutic dalteparin pre-procedure)

- Give dalteparin 5000 iu on day of surgery (day 0 - as soon as possible after procedure, by 6pm for morning surgery/ procedure, 10pm for afternoon surgery/procedure)
- Restart therapeutic dalteparin from day 1
- After major surgery (significant blood loss/risk of renal failure) please check FBC U&Es LFTs & INR before restarting warfarin
- Restart warfarin 2 days after surgery/procedure (defer to day 3 if surgery carries a high risk of wound bleeding). High risk patients must have at least 1 dose of therapeutic dalteparin before warfarin is started
- Dose of warfarin; If the INR remains 1.5 or more after surgery give the patient's usual maintenance dose. If the INR is less than 1.5 give warfarin at double their normal maintenance dose for the first dose followed by the usual maintenance dose daily thereafter
- Check INR within 3 days of restarting warfarin and stop the dalteparin when the INR is in the therapeutic range.
- If patient has cancer and therapeutic dalteparin is continued beyond 4 days then repeat FBC between days 4 - 7 & 10 - 14 to look for a fall in platelet count (heparin induced thrombocytopenia), discuss any concerns with a consultant haematologist.

Post procedure: Low risk patients
(those patients who were not bridged with therapeutic dalteparin pre-procedure)

- Give prophylactic dalteparin according to VTE risk assessment / policy
- Restart warfarin 1 - 2 days after surgery/procedure (defer to day 2 if surgery carries a high risk of wound bleeding).
- Dose of warfarin; If the INR remains 1.5 or more after surgery give the patient's usual maintenance dose. If the INR is less than 1.5 give warfarin at double their normal maintenance dose for the first dose followed by the usual maintenance dose daily thereafter.
- Check INR within 3 days of restarting warfarin and stop the dalteparin when the INR is in the therapeutic range.