VTE – DEEP VENOUS THROMBOSIS

RECOGNITION AND ASSESSMENT

- Diagnosis of DVT and pulmonary embolism in pregnancy can be challenging because of the physiological changes that occur. Many of the classical symptoms of venous thromboembolism can occur in a low risk pregnancy

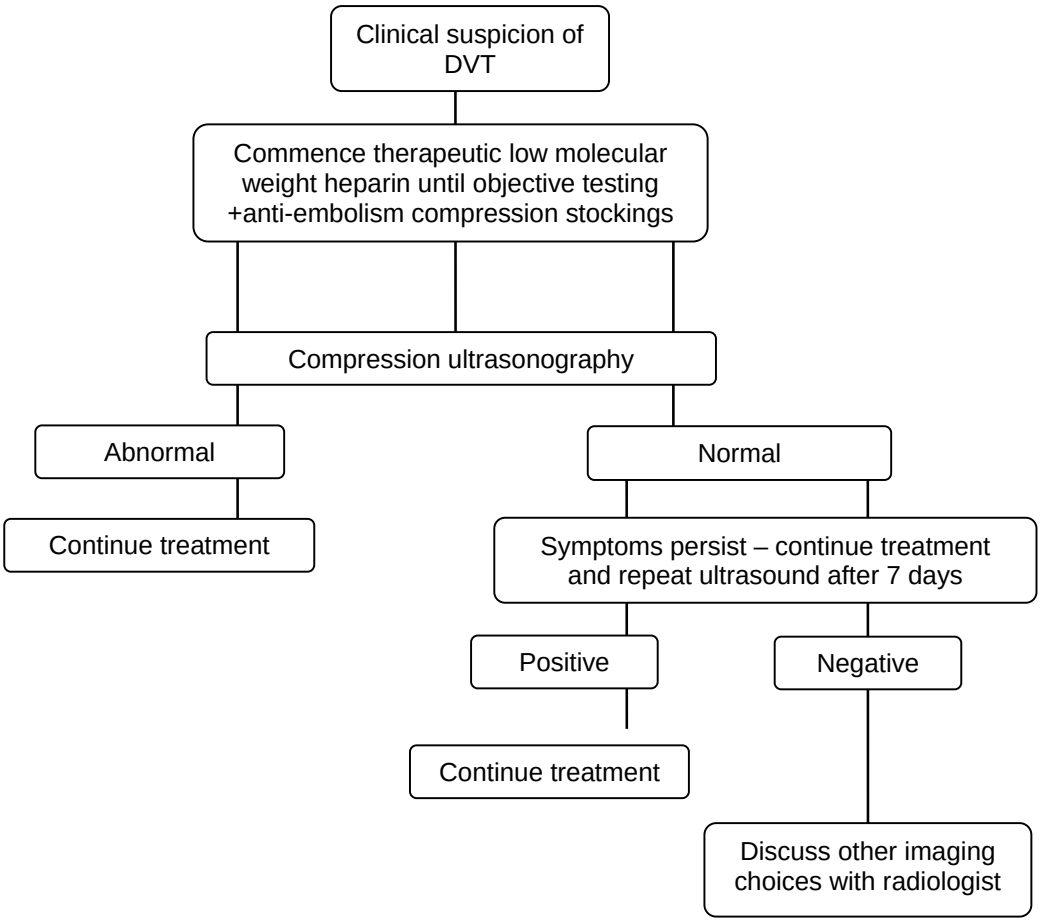
Symptoms and signs

- Leg pain
- Swelling
- Oedema
- Tenderness
- Change in leg colour
- Increased skin temperature
- Low-grade pyrexia
- Raised WCC

Investigations

If DVT suspected, start treatment with low molecular weight heparin (LMWH) until diagnosis

- Compression or duplex ultrasound is the first line diagnostic test for DVT in pregnancy. It is non-invasive, highly sensitive (97%) and specific (96%) for symptomatic proximal vein DVT, but is less accurate for isolated calf DVT
- if ultrasound negative and there is a low level of clinical suspicion, discontinue anticoagulant treatment
- if symptoms suggestive of PE, see **VTE – Pulmonary embolism** guideline
- If iliac vein thrombosis suspected (back pain and swelling of entire limb), consider magnetic resonance venography



TREATMENT

General

- Adequate analgesia
- Compression stockings
- in initial management of DVT, elevate leg and fit graduated elastic compression stocking to reduce oedema

Specific

- Blood for FBC, INR, APTT
- If platelet count $<75 \times 10^9$/L, seek advice from on-call haematologist before starting anticoagulation
- If platelet count $\geq 75 \times 10^9$/L, prescribe subcutaneous LMWH (Dalteparin or Enoxaparin – according to local practice)

Initial anticoagulant treatment in pregnancy

- In clinically suspected DVT, administer LMWH (Dalteparin or Enoxaparin – according to local practice) at doses below until objective testing excludes diagnosis
- In women with renal impairment, seek advice on dosage from haematologist

Therapeutic dose of LMWH

Initial dose	Early pregnancy weight (kg)				
	<50	**50–69**	**70–89**	**90–110**	**>110**
Dalteparin	5000 units 12-hrly	6000 units 12-hrly	8000 units 12-hrly	10,000 units 12-hrly	Calculate dose on individual weight 1 mg/kg 12-hrly
Enoxaparin	40 mg 12-hrly	60 mg 12-hrly	80 mg 12-hrly	100 mg 12-hrly	

Monitoring LMWH treatment

- If woman has not been given unfractionated heparin, monitoring for heparin-induced thrombocytopenia is not required
- If early pregnancy weight <50 kg or >90 kg and woman has bleeding problems, renal impairment, or massive PE, discuss need for anti-Xa monitoring with consultant haematologist

Maintenance treatment

- Choose one of the following two options after discussion with consultant haematologist
- therapeutic LMWH for 8–12 weeks followed by prophylactic dose for the rest of the pregnancy and at least 6 weeks postnatally

OR

- therapeutic LMWH throughout pregnancy and at least 6 weeks postnatally

Anticoagulant therapy during labour and delivery

- Discontinue LMWH maintenance therapy 24 hr before planned delivery
- Advise woman that once she is established in labour or thinks she is in labour, no further heparin or other anticoagulant should be injected
- Do not administer regional anaesthetic or analgesic until at least 24 hr after last dose of therapeutic LMWH

Administration of LMWH and use of epidural/spinal anaesthesia

- Before carrying out regional anaesthetic procedures, (i.e. insertion of epidural catheter or administration of a spinal injection) you must record when the most recent dose of LMWH was given and follow the steps below:
- wait 12 hr after a prophylactic dose of LMWH
- wait 24 hr after a therapeutic dose of LMWH
- After insertion/removal of an epidural catheter (or after insertion of a spinal anaesthetic) you must review the time that has elapsed before administering a dose of LMWH. LMWH can be given postnatally while epidural is *in situ*:
- a thromboprophylactic dose of LMWH can be given 4 hr after removal of epidural catheter
- Do not remove epidural catheter within 10–12 hr of most recent LMWH

Postnatal anticoagulation

- Continue therapeutic anticoagulant therapy for at least 6 weeks postnatally and until at least 3 months of treatment has been given in total. Offer a choice of LMWH or oral anticoagulant (warfarin)
- If starting warfarin, provide woman with counselling and an oral anticoagulant booklet. Document in book with follow-up appointment on discharge
- Heparin and warfarin are not contraindicated in breastfeeding
- If woman chooses to commence warfarin postpartum, avoid until at least the third postnatal day
- Daily INR testing is recommended during the transfer from LMWH to warfarin to avoid over-anticoagulation

DISCHARGE AND FOLLOW-UP

- Offer women who have been diagnosed with VTE during pregnancy or postnatal period a 6 week–3 month postnatal appointment with consultant haematologist