Managing Thrombosis and Pregnancy

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I haven't been able to touch my feet for three months

Aim

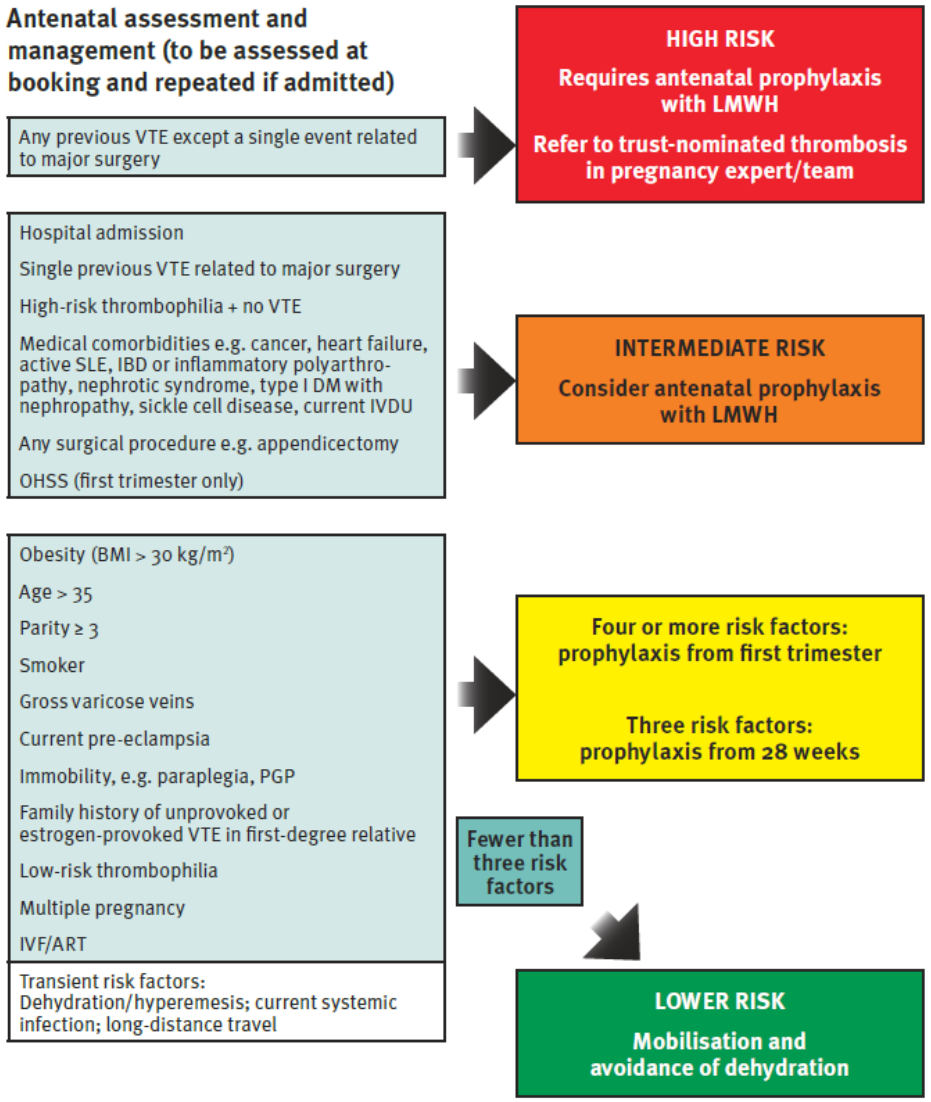
- Risk Assessment
  - Pre conceptual
  - Antenatal
  - Postnatal
- Investigations and management

Risk assessment

- Pre conceptual
- Poorly thought through and often not considered until the positive test.
- Family/ personal history
- BMI

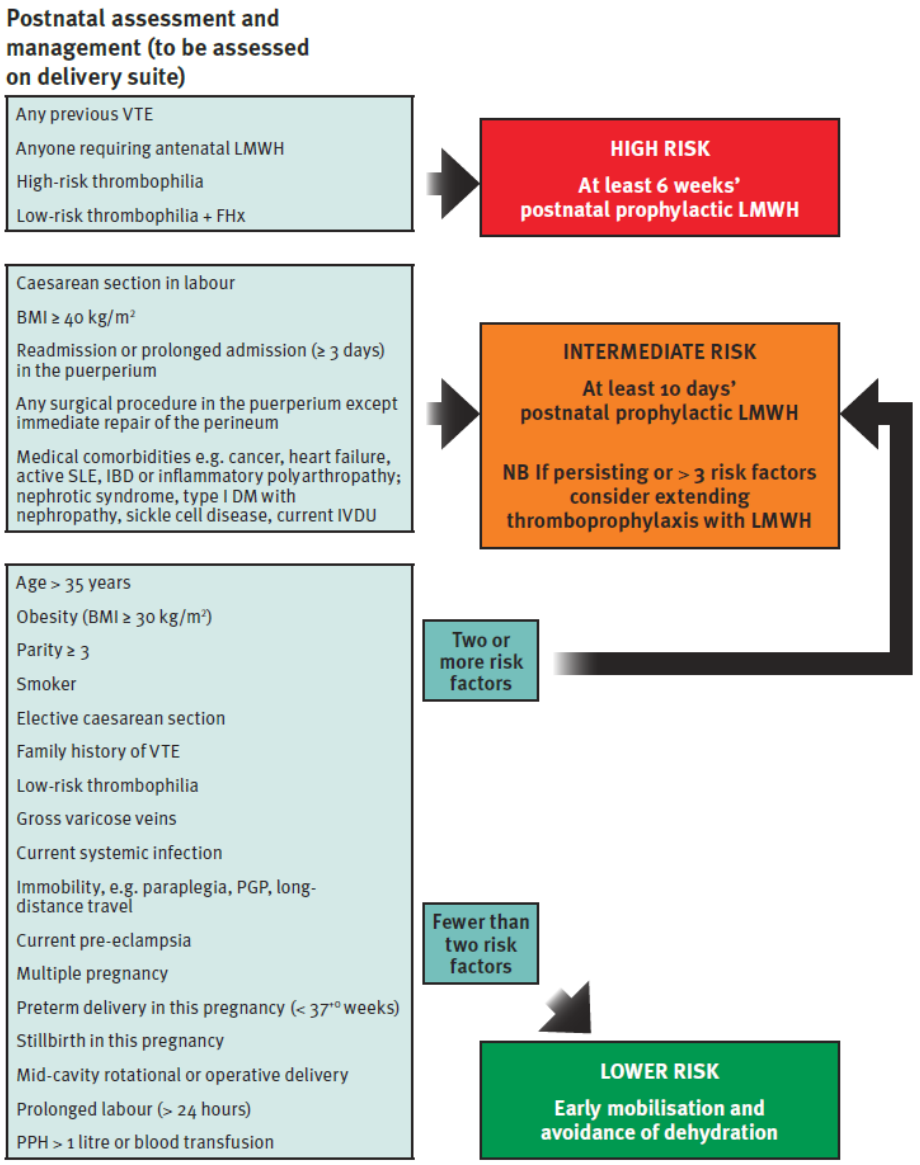
Risk assessment

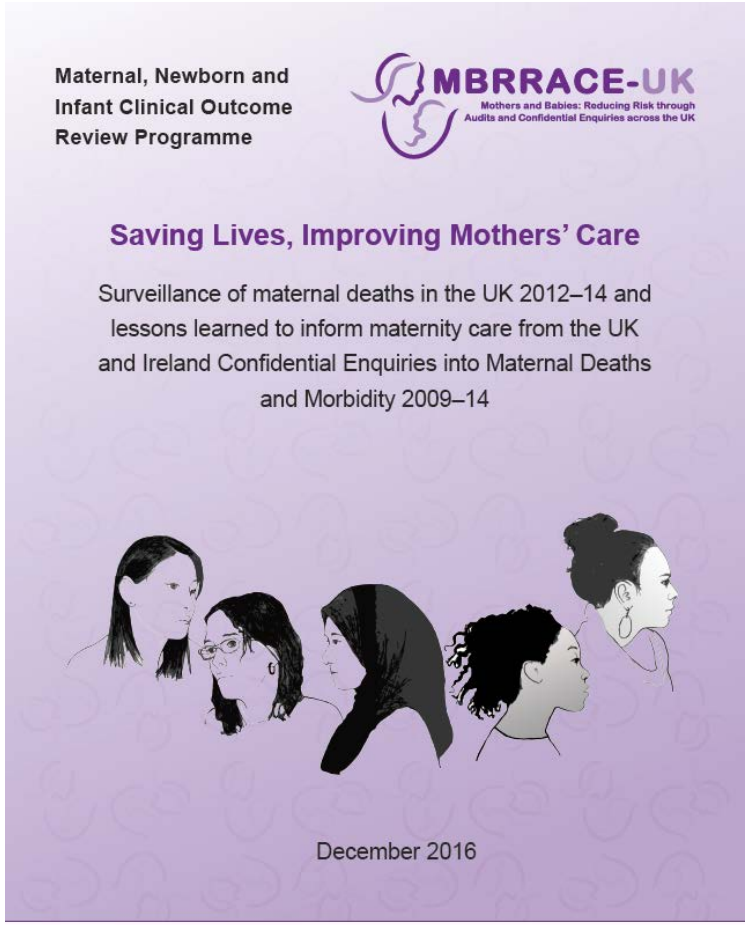
- Antenatal

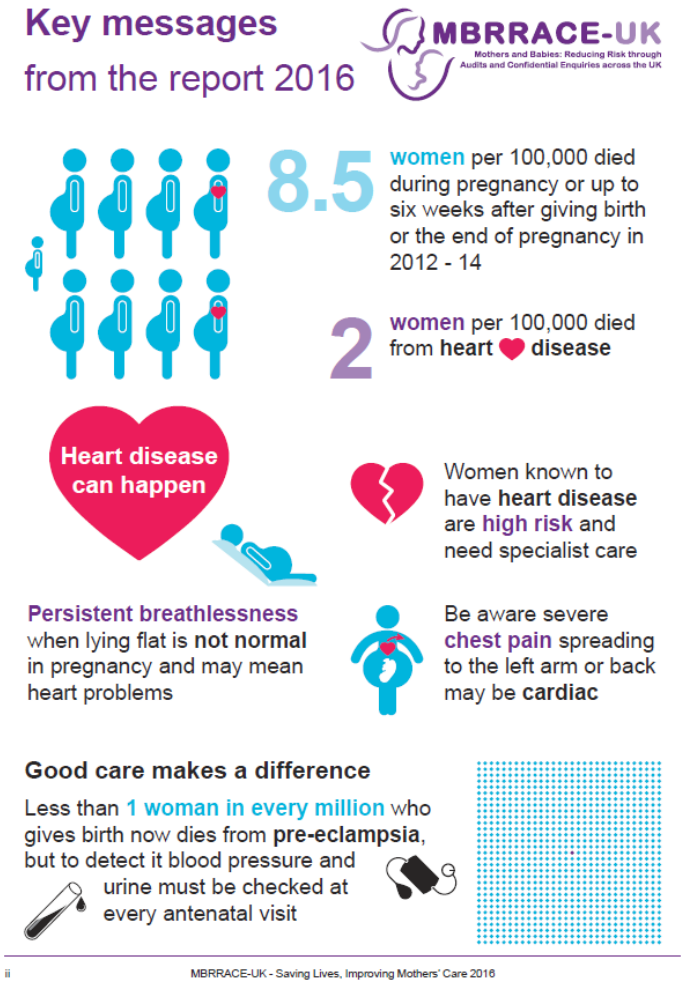


Risk assessment

- Post natal







'Thrombosis and thromboembolism remain the leading cause of direct maternal death and cardiovascular disease the leading cause of indirect maternal death during or up to six weeks after the end of pregnancy'.

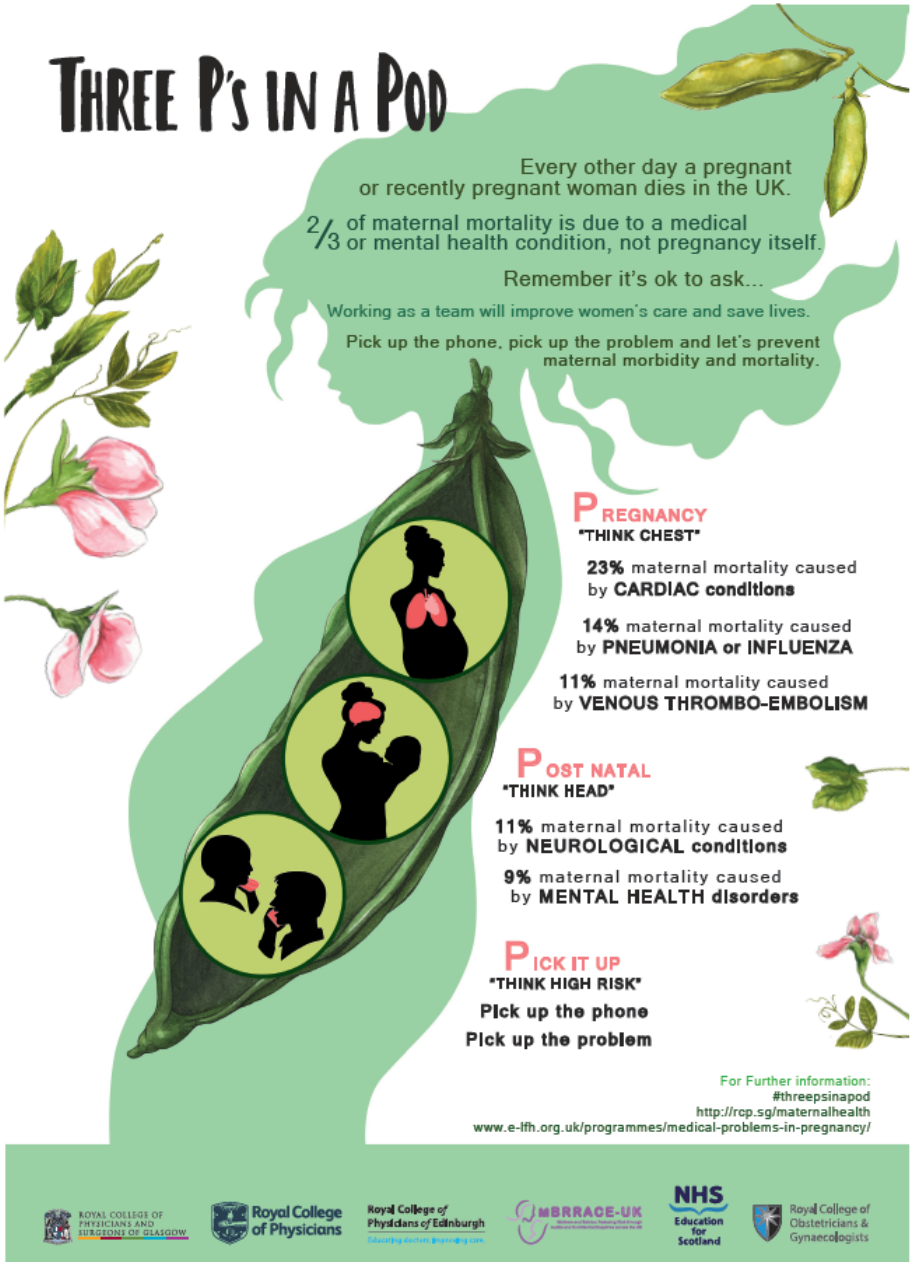
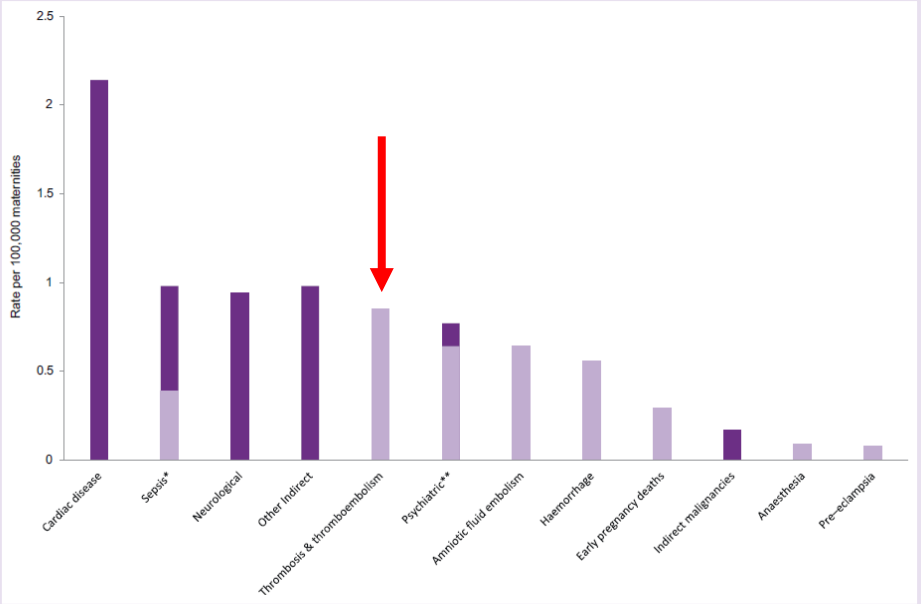


Figure 2.4: Maternal mortality by cause 2012–14

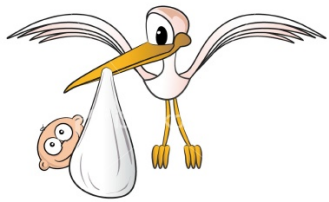


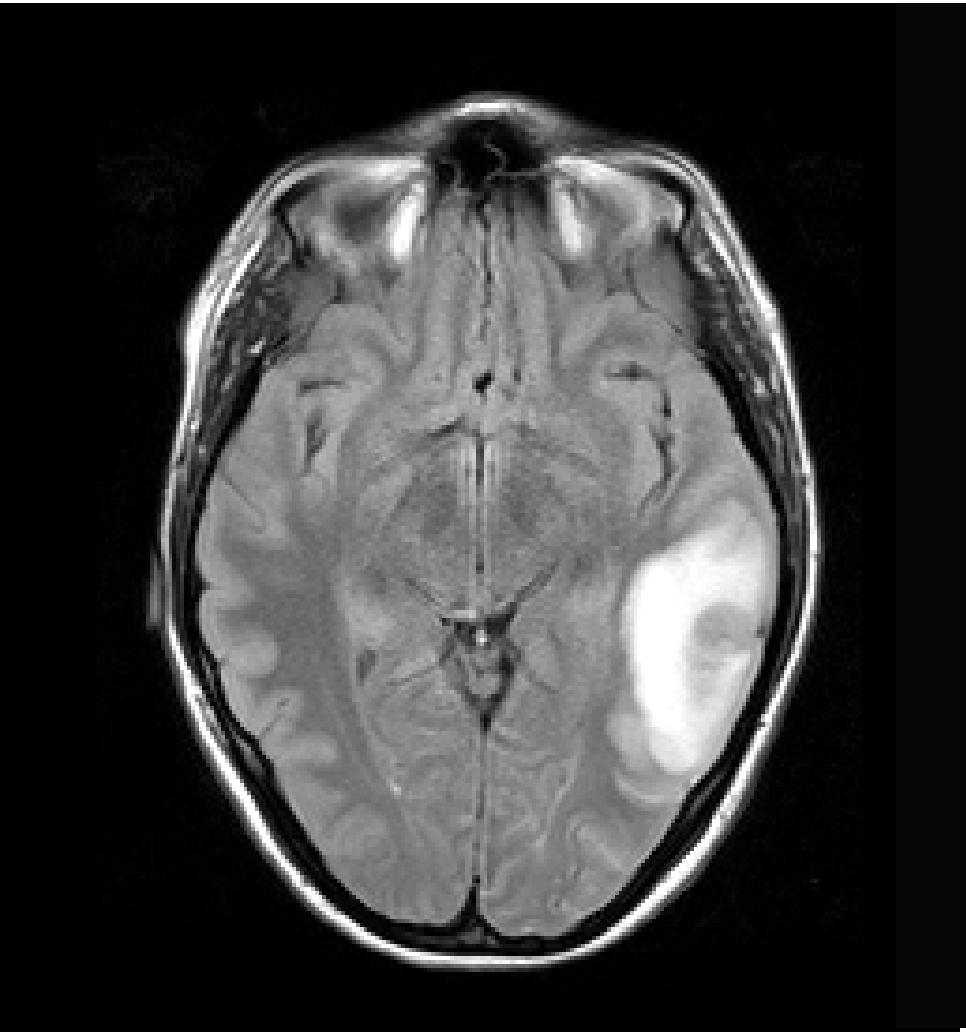
Dark bars indicate indirect causes of death, pale bars show direct causes of death;
*Rate for direct sepsis (genital tract sepsis and other pregnancy related infections) is shown in pale and rate for indirect sepsis (influenza, pneumonia, others) in dark bar
**Rate for suicides is shown in pale and rate for indirect psychiatric causes (drugs/alcohol) in dark bar
Source: MBRRACE-UK

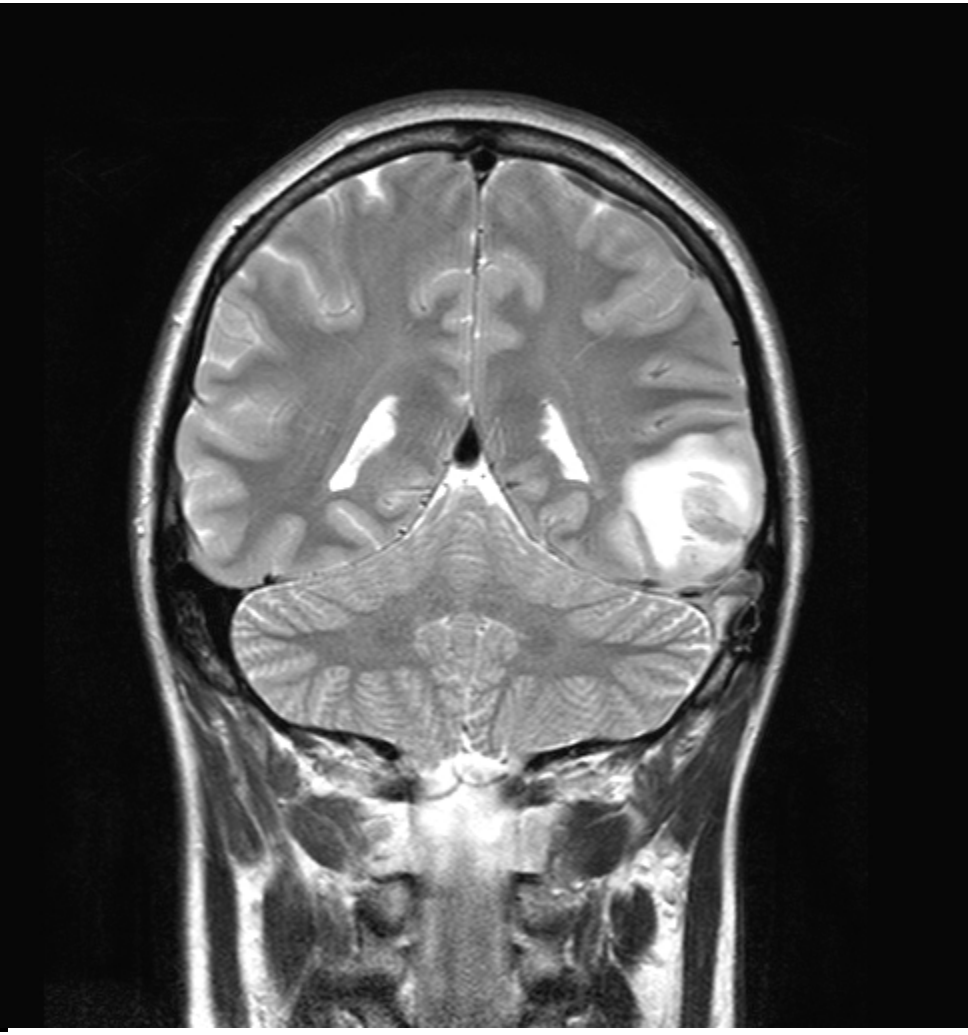
Direct Deaths resulting from obstetric complications of the pregnant state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment or from a chain of events resulting from any of the above.

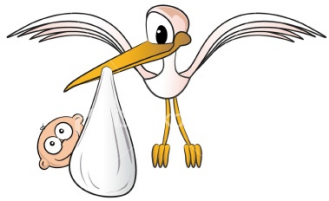
Medical history

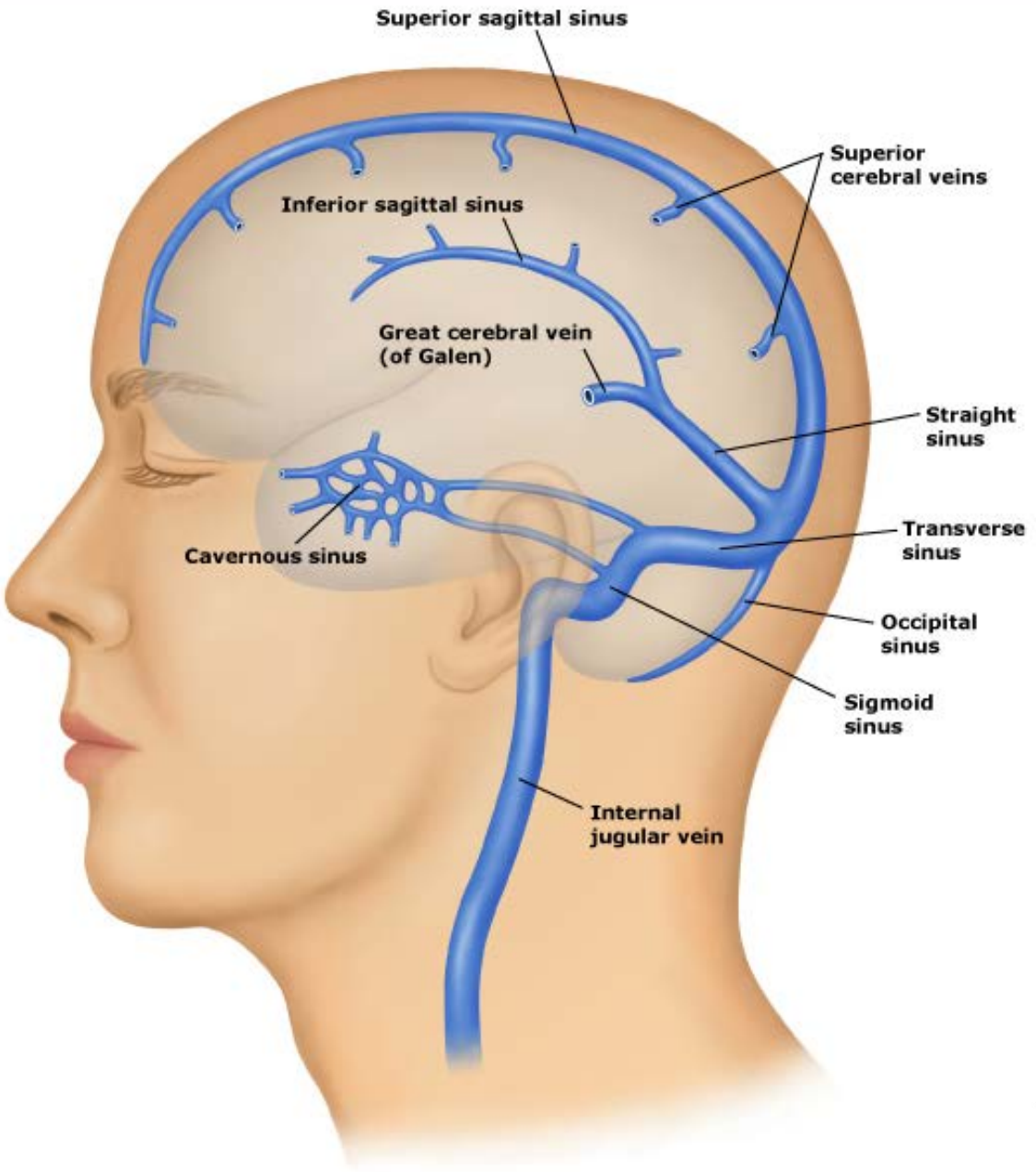
- P2+0
- LMP one week late, positive pregnancy test
  - Progressive headache
  - Nausea, vomiting
  - Admitted for rehydration.
  - Generalised tonic clonic seizures
- MRI scan

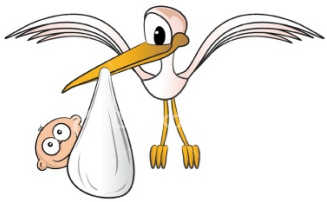


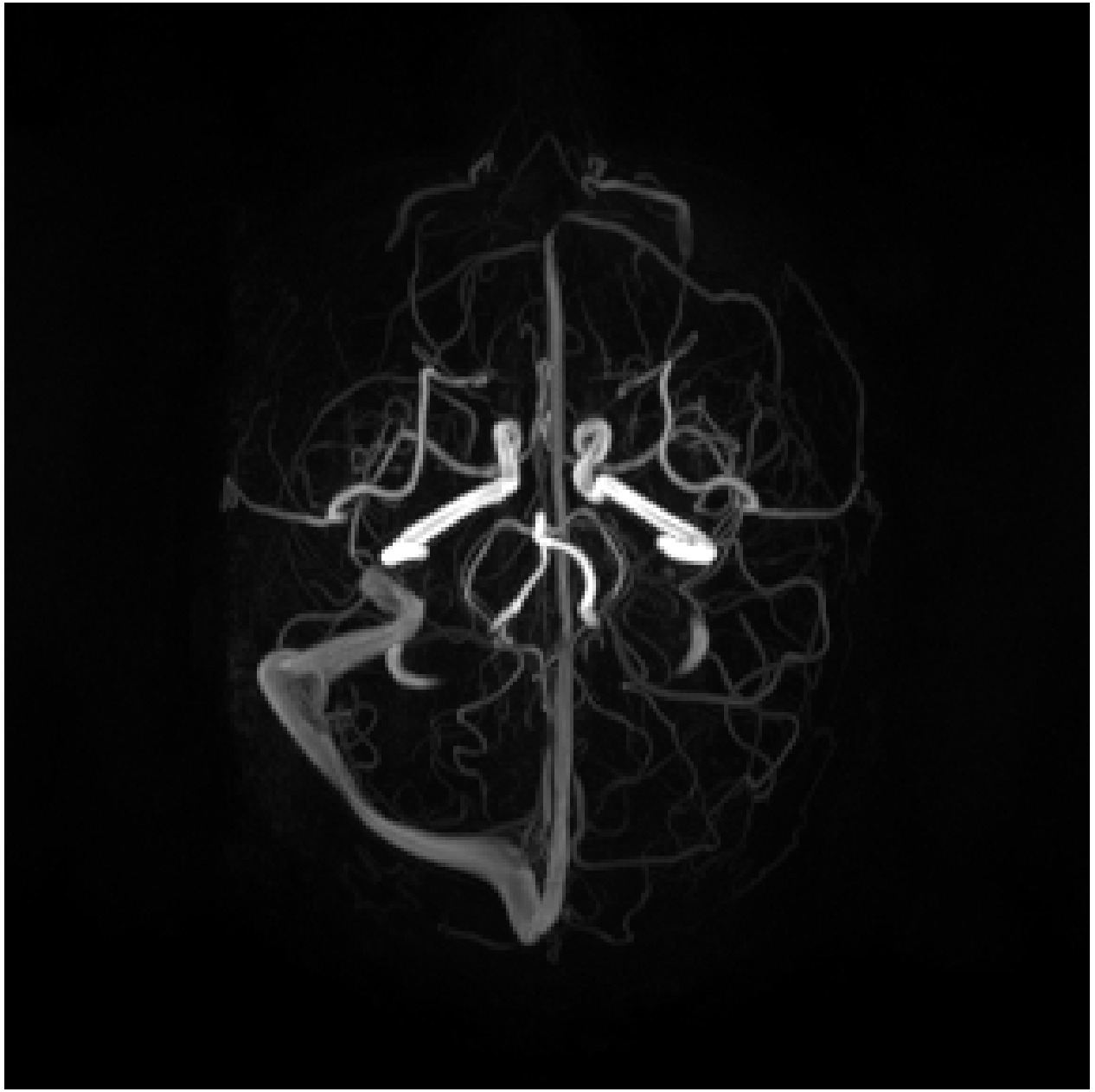


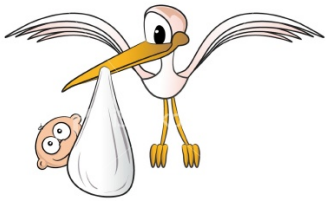





Superior sagittal sinus
Superior cerebral veins
Inferior sagittal sinus
Great cerebral vein (of Galen)
Straight sinus
Transverse sinus
Cavernous sinus
Occipital sinus
Sigmoid sinus
Internal jugular vein





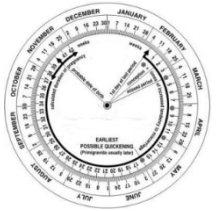


DVT investigations

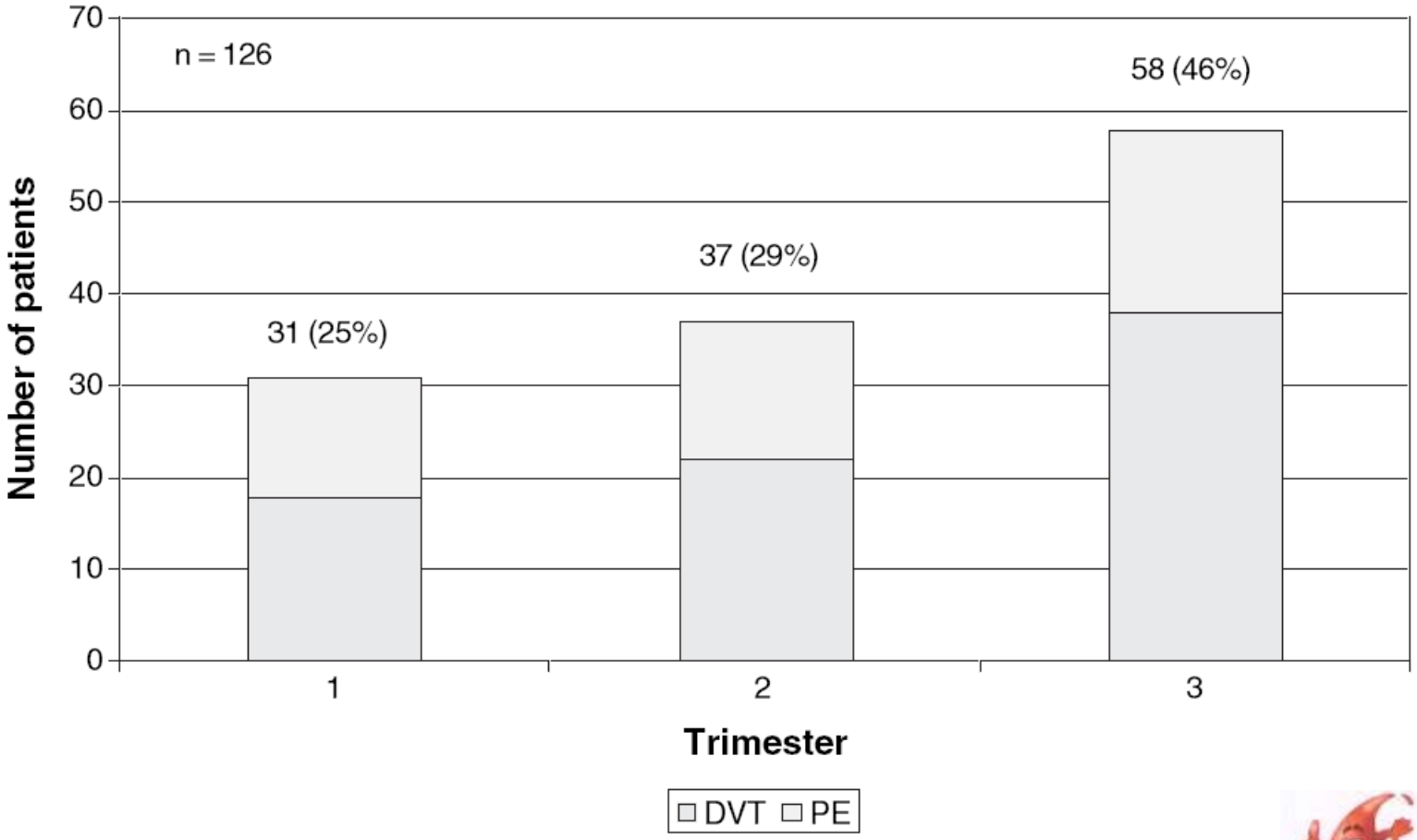
- Compression duplex ultrasound should be undertaken where there is clinical suspicion of DVT. If ultrasound is negative and there is a low level of clinical suspicion, anticoagulant treatment can be discontinued.

- Surprised its negative, consider continuing treatment for a further week and repeating the scan again.

- When iliac vein thrombosis is suspected (back pain and swelling of the entire limb), magnetic resonance venography or conventional contrast venography may be considered



The management of antenatal venous thromboembolism in the UK and Ireland: a prospective multicentre observational survey*



Diagnosis of antenatal venous thromboembolic event by trimester.

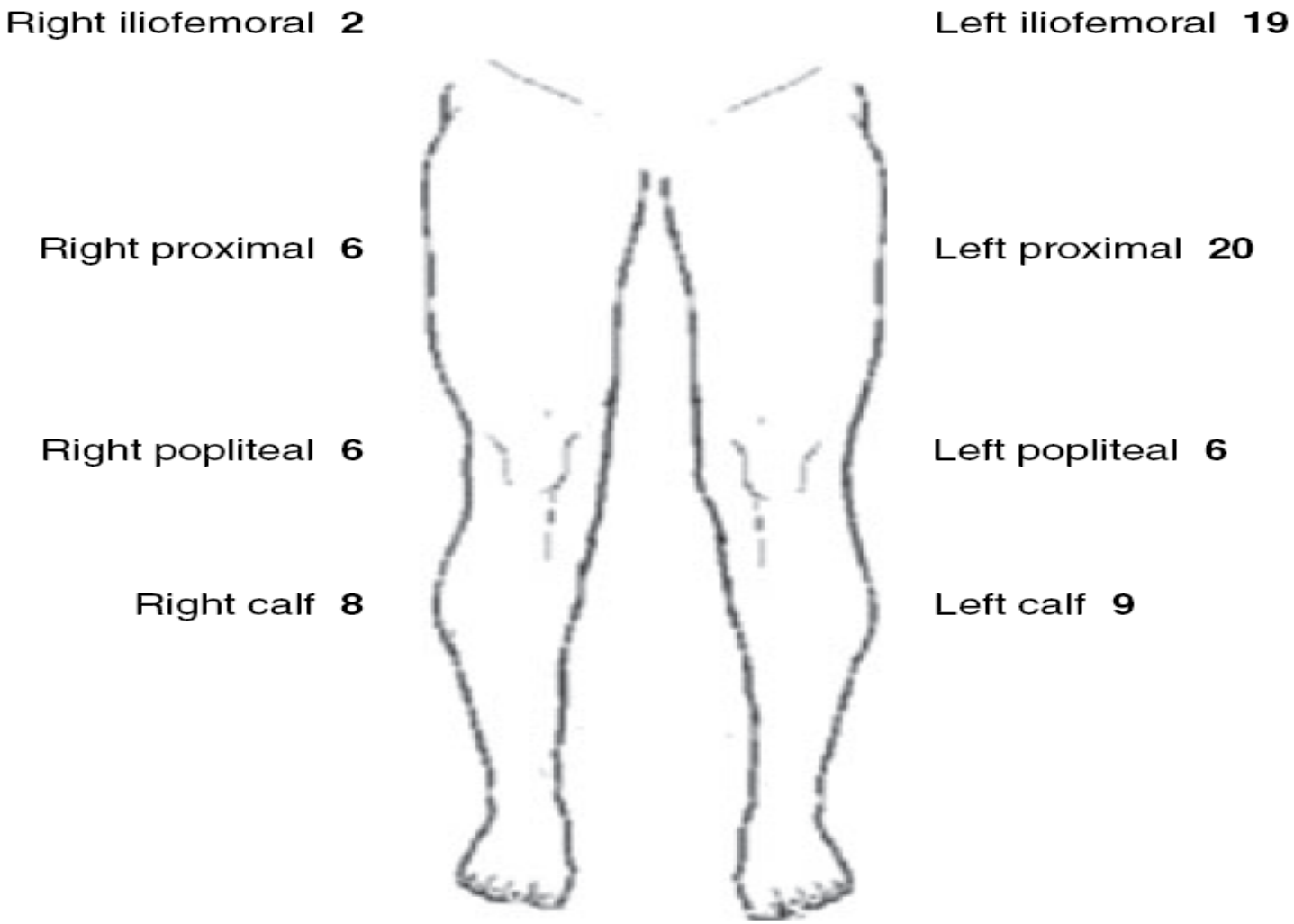
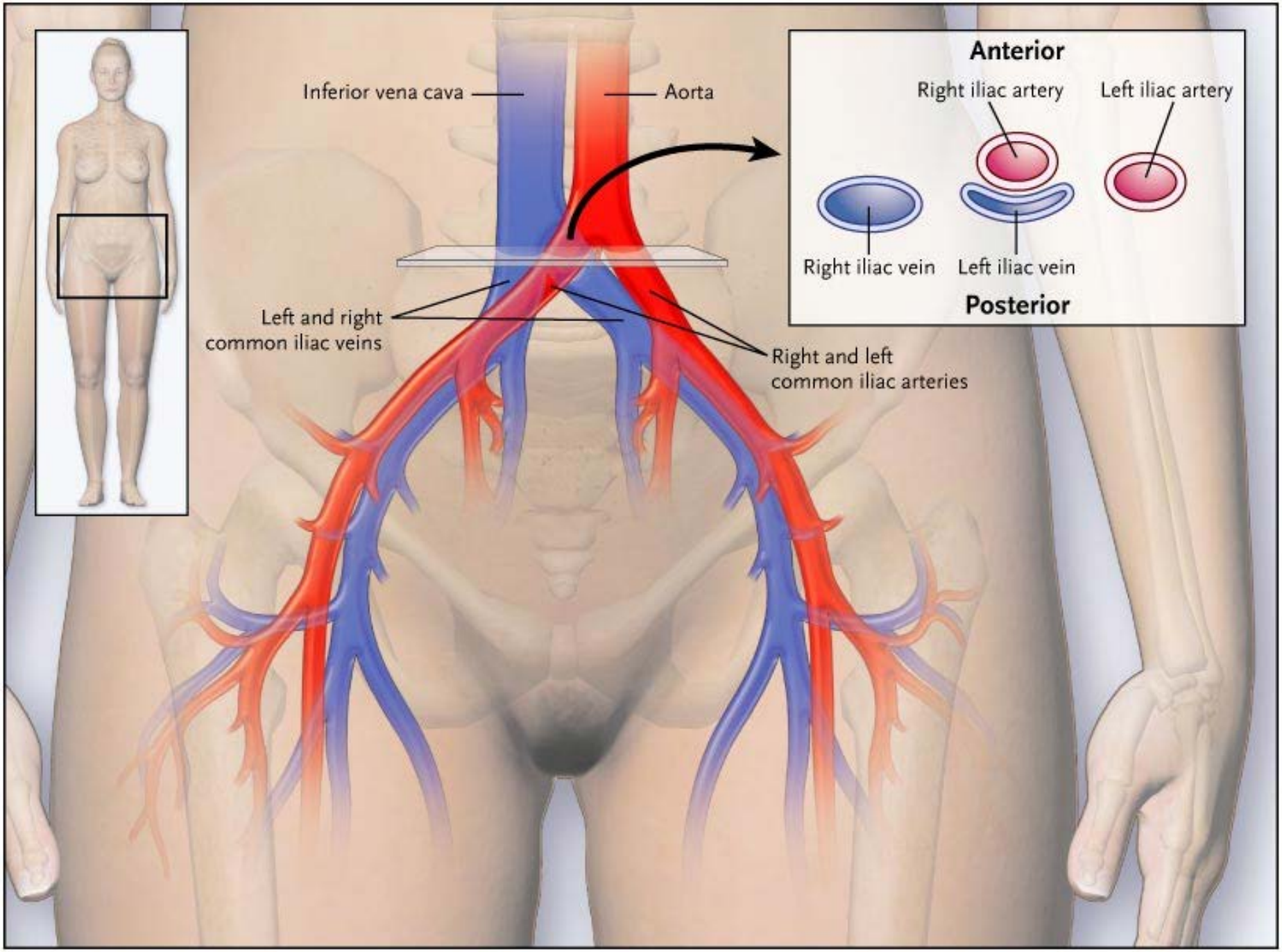


Fig 3. Site of acute deep vein thrombosis in 78 antenatal patients. The numbers of patients affected are shown in bold.


Inferior vena cava
Aorta
Left and right
common iliac veins
Right and left
common iliac arteries
Anterior
Right iliac artery
Left iliac artery
Right iliac vein
Left iliac vein
Posterior

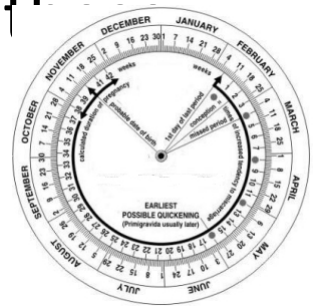
PE investigations

- Where there is clinical suspicion of acute PE a chest X-ray should be performed. Compression duplex Doppler should be performed where this is normal. If both tests are negative with persistent clinical suspicion of acute PE, a ventilation–perfusion (V/Q) lung scan or a computed tomography pulmonary angiogram (CTPA) should be performed

- Alternative or repeat testing should be carried out where V/Q scan or CTPA and duplex Doppler are normal but the clinical suspicion of PE is high. Anticoagulant treatment should be continued until PE is definitively excluded

- Women with suspected PE should be advised that V/Q scanning carries a slightly increased risk of childhood cancer compared with CTPA (1/280,000 versus less than 1/1,000,000) but carries a lower risk of maternal breast cancer (lifetime risk increased by up to 13.6% with CTPA).

- Where feasible, women should be involved in the decision to undergo CTPA or V/Q scanning. Ideally, informed consent should be obtained before t
tests are undertaken.



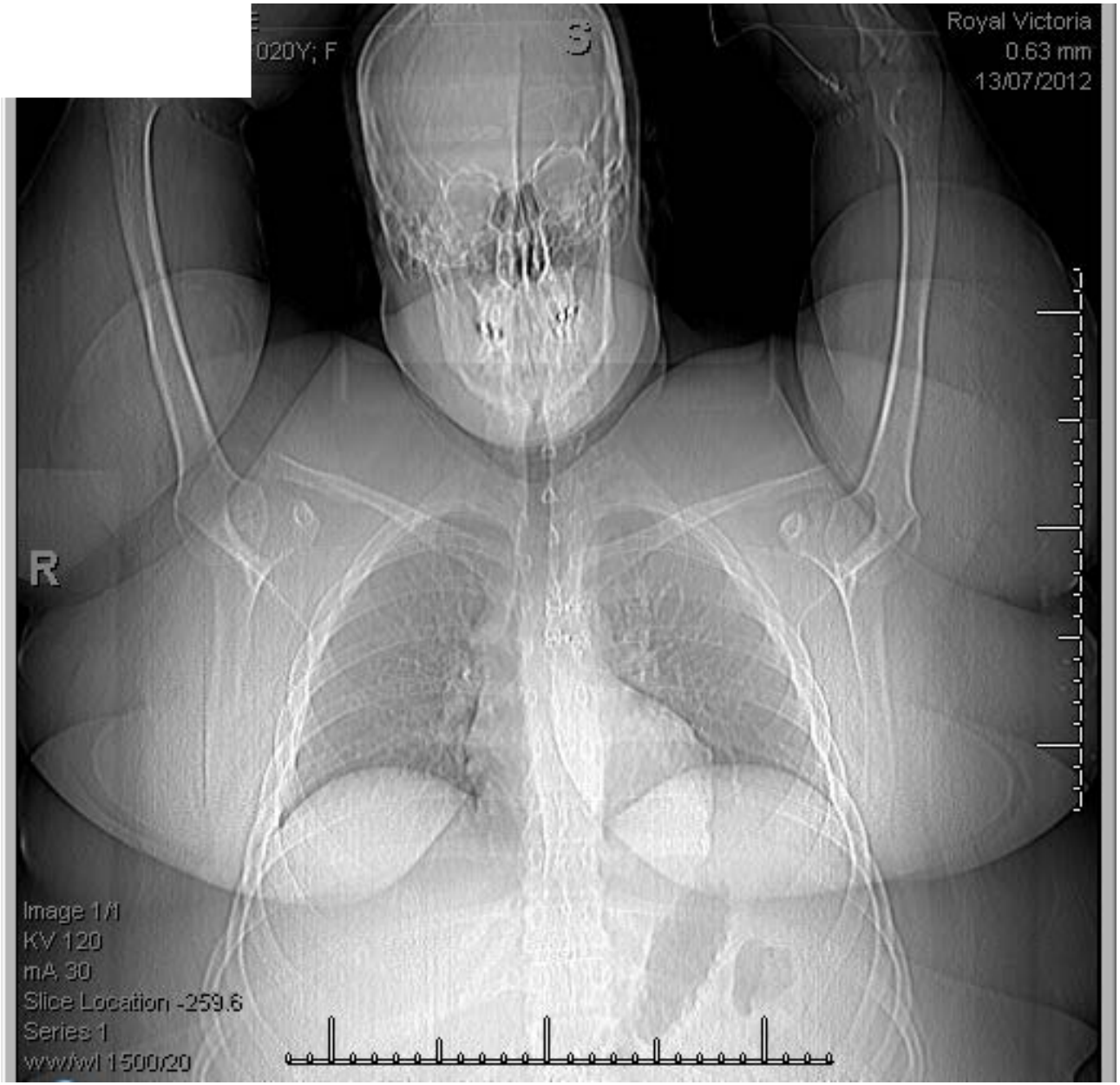

020Y; F
Royal Victoria
0.63 mm
13/07/2012
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Image 1/1
KV 120
mA 30
Slice Location -259.6
Series 1
ww/wl 1500/20

D-dimer

- D-dimer testing should not be performed to diagnose acute VTE in pregnancy

Investigations

- DVT
- No d-dimer
- Doppler ultrasound
  - ?repeat

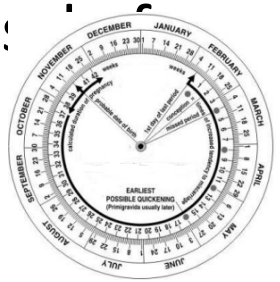
- PE
- No d-dimer
- ?bilateral leg doppler
- ?VQ/ CTPA

Safe prescribing LMWH

- Before anticoagulant therapy is commenced, blood should be taken for a full blood count, coagulation screen, urea and electrolytes and liver function tests.

- Performing a thrombophilia screen is not recommended

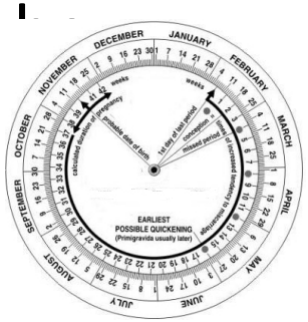
- Arrangements should be made to allow safe dispos needles and syringes



Monitoring required

- Routine measurement of peak anti-Xa activity for patients on LMWH for treatment of acute VTE in pregnancy or postpartum is not recommended except in women at extremes of body weight (less than 50 kg and 90 kg or more) or with other complicating factors (for example with renal impairment or recurrent VTE) putting them at high risk.

- Routine platelet count monitoring should not be carried out

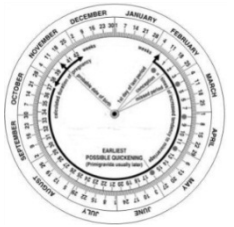


How to manage the collapsed patient with PE

- Collapsed, shocked patients need to be assessed by a team of experienced clinicians, including the oncall consultant obstetrician, who should decide on an individual basis whether a woman receives intravenous unfractionated heparin, thrombolytic therapy or thoracotomy and surgical embolectomy.

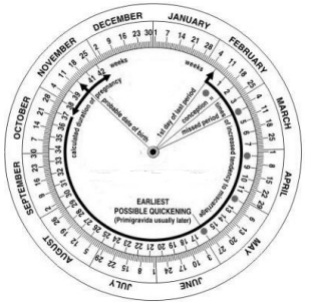
- The on-call medical team should be contacted immediately. An urgent portable echocardiogram or CTPA within 1 hour of presentation should be arranged. If massive PE is confirmed or, in extreme circumstances prior to confirmation, immediate thrombolysis should be considered.

- Maternity units should develop guidelines for the administration of intravenous unfractionated heparin.



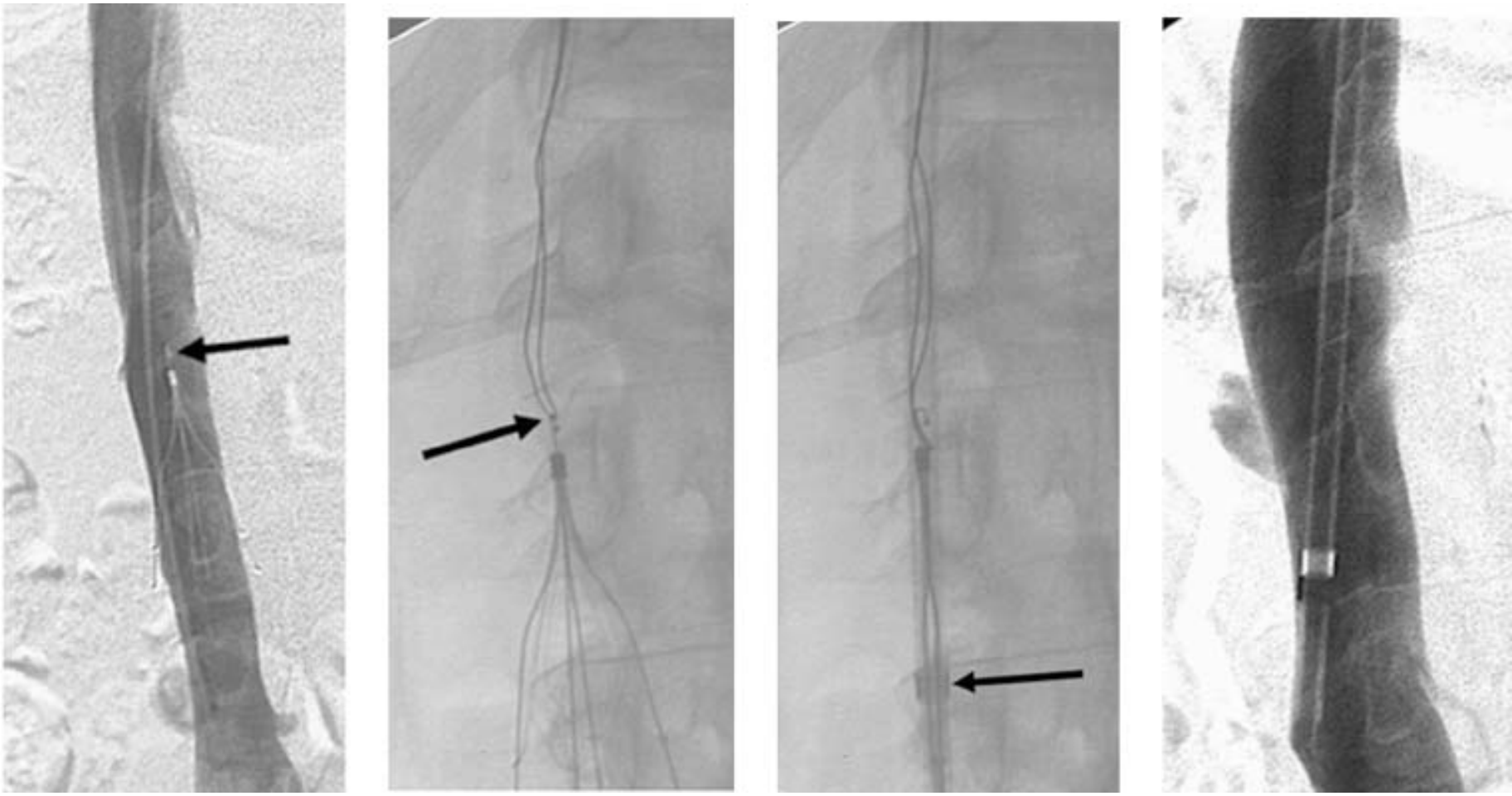
Other treatment options

- In the initial management of DVT, the leg should be elevated and a graduated elastic compression stocking applied to reduce oedema. Mobilisation with graduated elastic compression stockings should be encouraged.
- Consideration should be given to the use of a temporary inferior vena caval filter if the proximal event occurs within 6 weeks of the expected delivery, to reduce the risk of PTE or in women with proven DVT and who have continuing PTE despite adequate anticoagulation.
- It should be electively placed as close to delivery possible and removed electively one week later



IVC filter insertion

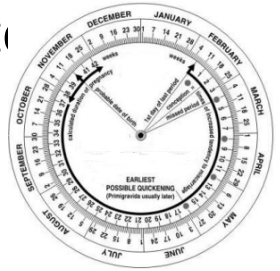
- *Filtering the clots during pregnancy - experience at a tertiary centre*
- This was a retrospective review of case records, of women who had an IVC filter inserted during pregnancy or postpartum period over fourteen years (1997-2010).
- IVC filters were inserted in 14 patients
- Filters were retrieved successfully in 57% of the women whilst the others were advised to continue lifelong warfarin



A–D

Delivery plan

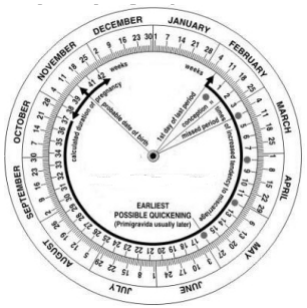
- The woman taking LMWH for maintenance therapy should be advised that once she is established in labour or thinks that she is in labour, she should not inject any further heparin.
- Where delivery is planned, LMWH maintenance therapy should be discontinued 24 hours before planned delivery.
- Regional anaesthetic or analgesic techniques should not be undertaken until at least 24 hours after the last dose of therapeutic LMWH
- In women receiving therapeutic doses of LMWH, wound drains should be considered at caesarean section and the skin incision should be closed with staples or interrupt sutures to allow drainage of any haematoma



- Any woman who is considered to be at high-risk of haemorrhage and in whom continued heparin treatment is considered essential should be managed with intravenous, unfractionated heparin until the risk factors for haemorrhage have resolved

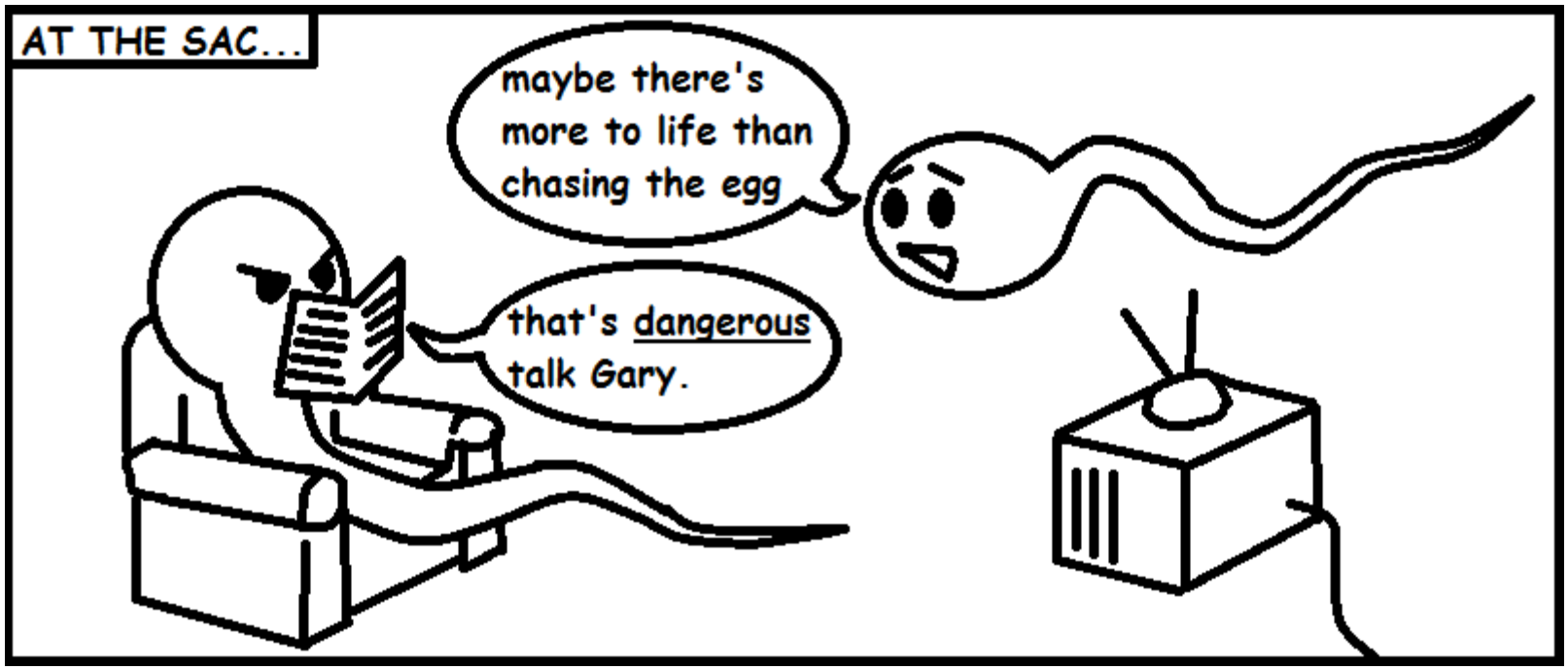
Duration of treatment

- Therapeutic anticoagulant therapy should be continued for the duration of the pregnancy and for at least 6 weeks postnatally and until at least 3 months of treatment has been given in total
- Women should be offered a choice of LMWH or oral anticoagulant for postnatal therapy after discussion about the need for regular blood tests for monitoring of warfarin, particularly during the first 10 days of treatment
- Women should be advised that neither hepar warfarin is contraindicated in breastfeeding



- Postpartum warfarin should be avoided until at least the third day and for longer in women at increased risk of postpartum haemorrhage

- Graduated elastic compression stockings should be worn on the affected leg for 2 years after the acute event, if swelling persists, to reduce the risk of post-thrombotic syndrome


AT THE SAC...
maybe there's more to life than chasing the egg
that's dangerous talk Gary.