Haemorrhage in Sepsis

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Background

24 year old

Booking BMI 21

Gravida 2 Para 1

Non-smoker, no alcohol/drug history

No significant family or personal medical history

Previous pregnancy in 2016 was uncomplicated

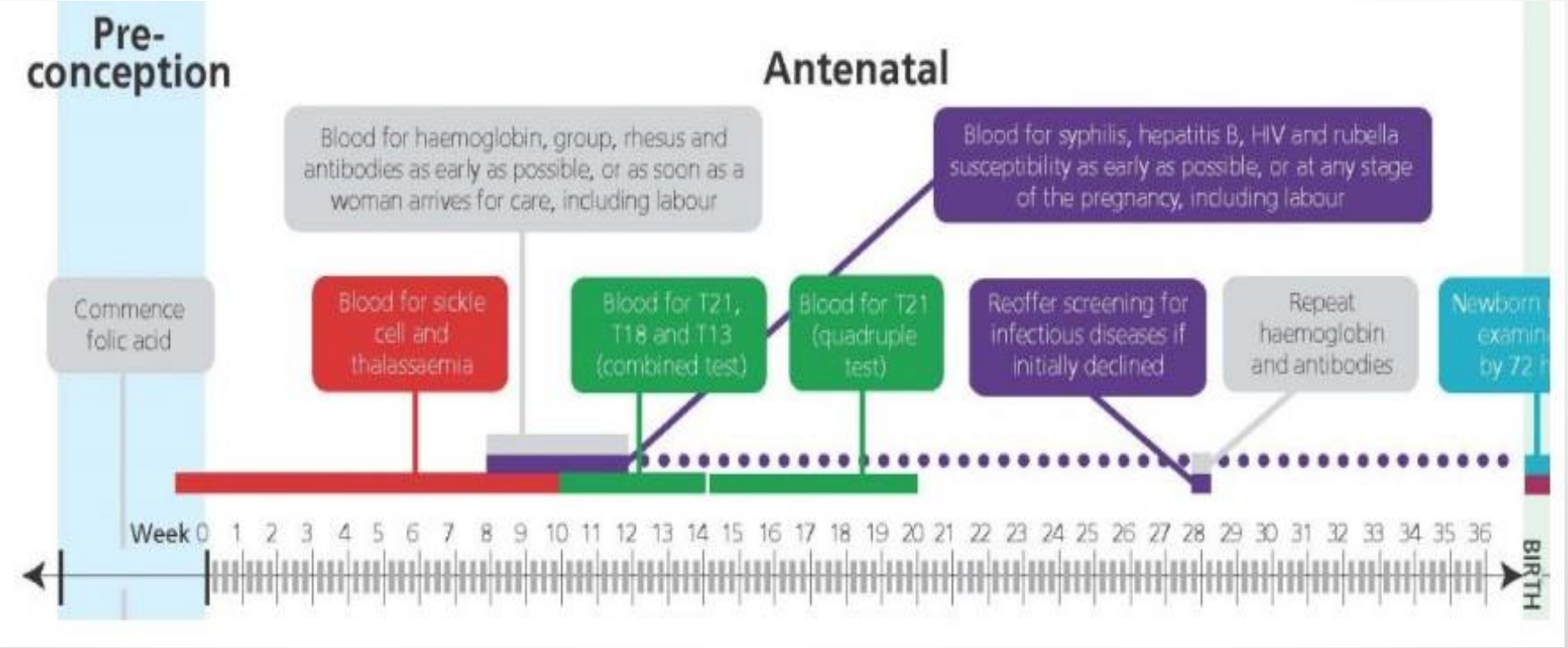
Low risk

Antenatal Care

Uneventful antenatal period

Urine and Blood pressure normal at all visits

Routine screening – determined as low risk



Dramatic delivery

At 40+5 weeks gestation
Phone call received from partner
Woman pushing in car outside
Made it to antenatal clinic room
Spontaneous rupture of membranes with clear liquor
Delivered baby in good condition with one contraction
Placenta delivered after routine syntocinon
EBL 100mls
Observations normal including apyrexial.
Transferred to delivery suite
Cleaned and perineal assessment required repair of vaginal tear
Six hour discharge.

Postnatal Care

Postnatal checks in community by midwife

Day 5: CMW visit – unwell

Abdo pain, loose stools and hot flushes

Obtained low vaginal swab

Plan for GP urgent review

GP visit

“ looks desperately unwell”

Temperature 38.4

Blood pressure 87/46,

Respiratory rate 24

Cannulated and administered IV fluids

GP arranged urgent ambulance transfer to hospital

Ambulance arrived in 6 minutes

Hospital Admission

Observations:

- BP 100/60
- HR 160
- temperature 38.9
- RR 36

Sepsis six

- Oxygen via mask
- Blood cultures
- IV Antibiotics
- 2 litres of IV fluids
- Lactate measured
- Catheterised for urine output

Sepsis screen initiated

Referred to Obstetrician

Question

Which fluid replacement would be best here?

- Crystalloids
- Colloids
- Albumin
- Blood

O&G review

Tender uterus
Healing perineum

Puerperal sepsis

Status

Observations:

- BP 90/56
- HR 122,
- temp 37.4
- sats 98%
- RR 18

Bloods

- WCC 1.73
- Hb 116
- Plt 72
- BM 3.4 / 2.9
- CRP 459
- Lactate 4.5

Resuscitation

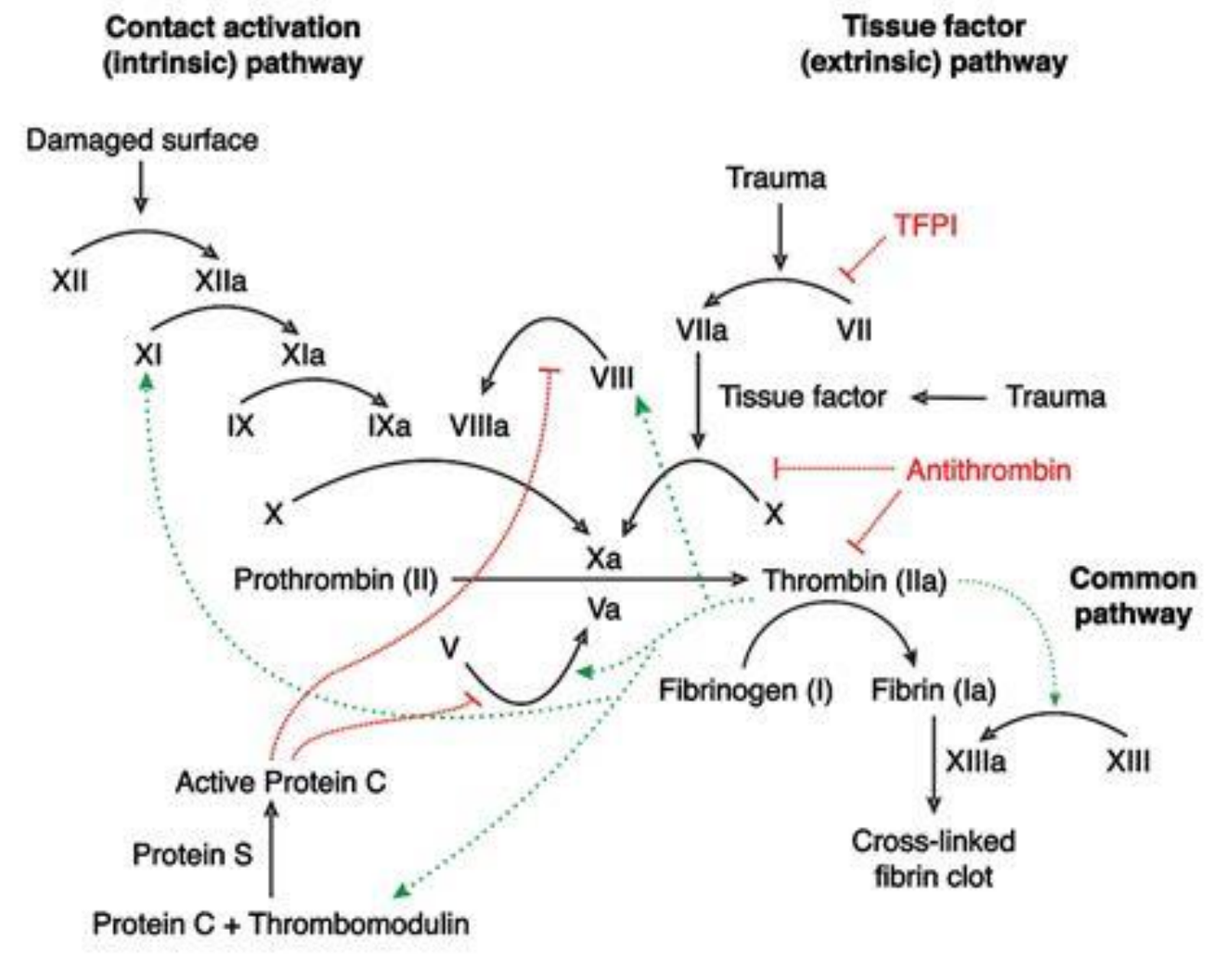
- 2 litres of IV fluids
- ITU admission
- Antibiotics

Question

Why the deranged coagulation but normal Hb?

- This is usual in cases of hypovolaemia
- Haemoglobin can be normal in sepsis-driven DIC
- Having a normal Haemoglobin excludes DIC

Coagulation pathway



ITU Review

Observations:

- BP 118/79
- HR 130
- temp 36.4
- sats 99
- RR 38

Bloods

- Clotting
- PT – 29.5 H
- PTT- 66.6 H
- Fibrinogen 4.68
- Hb 116
- Plt 76

- CRP 459
- Lactate 2.2

Management

- Evidence of coagulopathy, normal fibrinogen– requested FFP
- IV vit K
- CT abdo/pelvis - appendicitis
- Admit to ICCU

Question

- Why the normal fibrinogen with abnormal clotting?

- This is not DIC
- Fibrinogen is not part of the DIC diagnosis
- Fibrinogen can be normal in DIC

Surgical intervention

Day 5 Postnatal

Decision to proceed to laparoscopy

Observations:

- BP 113/82
- HR 143
- temp 38.2
- sats 100
- RR 33
- Poor urine output

Preop Bloods

- Clotting
- PT – 21.6
- PTT- 79.8
- Fibrinogen 3.02
- Hb 121
- Plt 26
- Lactate 7.4

Management

- Laparoscopy + ERPC
- 2 x platelets given pre-op
- No appendicitis
- Uterine infection. Washout.
- Intubated and ventilated

Postop review

Observations:

- Not maintaining BP without significant support
- (90/38)
- HR 142
- temp 37.8
- Poor urine output

Preop Bloods

- Clotting
- PT- 20.3
- PTT- 49.9
- Fibrinogen 1.90
- Hb 50
- Plt 59

Renal function tests – creat- 107, urea 18.7, potassium- 4

Management

- Transfused 5 units RBC
- 4 x FFP
- 2 x platelets
- 3 x albumin infusions
- Decision made for dialysis

Question

- At this point, drop in Hb thought to be sepsis driven. In this case, how do we best manage fluid replacement?

- Colloid
- RBC
- Crystalloid
- Albumin
- Cryoprecipitate
- FFP

Obstetric review in ITU

Day 6 Postnatal

Decision to proceed to hysterectomy

Postop Bloods

- Clotting- stable
- Fibrinogen- normal
- Hb 82
- Plt 80
- creat 214
- urea 10.4

Management

- RBC
- Platelets
- FFP

- CT scan - IVC clot
- LMWH in 2 divided doses (5,000 BD)

Question

- What choices do we have for anticoagulation here? What effect does dialysis have on this decision making?

- LMWH
- Heparin infusion
- Either- there is no difference on patients undergoing dialysis
- Don't anti-coagulate in presence of DIC as bleeding risk too high

Histology

- Group A strep on swabs from endometrial cavity
- Widespread severe myometritis and necrotic endometrium
- Significant infection spreading to both tubes and ovaries

Diagnosis: Invasive group A strep causing ascending endometritis

ITU

Postop Bloods

- Clotting- stable
- Fibrinogen- normal
- Hb 59
- Plt 33

Renal function tests

Urea 18.7

Creat 354

Management

- Extubated
- 1 pool plts
- 1 x albumin (200mls)
- 2 units RBC
- Changed to heparin infusion
- Still on dialysis due to oliguria and bloods

- CT scan – unusual defect in IVC, haematologist suggests treat as likely DVT

ITU contd.

Postop Bloods

- Hb 60
- Plt 30
- Nil in drain, no PV loss
- 24 hr urine output- 70mls
- Noradrenaline still required for BP

Management

- 1 plt
- 2 albumin
- 2 RBC
- CT abdo pelvis due to IVC and dropping Hb – probable thrombophlebitis rather than clot evident now. To stop heparin
- Needed further After this, Hb still 60

Question

Why the drop in Hb despite no clinical signs of bleeding? Can this drop be explained by sepsis alone?

- Not likely sepsis, probably concealed bleeding
- Haemolysis can be significant but should respond to transfusion
- This is all part of the sepsis/ DIC picture and needs more aggressive treatment

Bleeding again

Day 9 Postnatal
Abdomen distended
14 units RBC in total and not maintaining Hb

Obs
- Temp 38.1
- BP 91/47
- HR129
- RR 33

Bloods
- Hb 50
- plt 60
- Normal clotting now

Back to theatre

CT angiogram – large haemoperitoneum/ pneumonia

Exploratory laparotomy

Evacuation of haematoma, insertion of pelvic drain

7000mls blood drained abdominally

Question

- What role does the large haematoma play in renal function?

- Large scale haemolysis
- Hypovolaemia
- Secondary compartment syndrome causing hypoperfusion
- No role

Finally…

- 1400mls serosanguinous fluid from drain
  - 2 further RBC
  - Looking well

- Stepped down to postnatal ward prior to home.

TOTAL BLOOD PRODUCTS

- 22 units RBC
  - 4 FFP
- 8 pools plts
- 14 albumin

Question

Could we have rationalised/improved the use of blood products?

- More rationalised use of blood products
- Change in the blood products used
- More specialty involvement

Thank you
Any questions?