Royal Berkshire
NHS Foundation Trust

Guideline for the management of Thrombocytopenia in pregnancy (GL927)

Approval and Authorisation

Approved by	Job Title or Chair of Committee	Date
Maternity Clinical Governance Committee	Chair, Maternity Clinical Governance Committee	6th October 2017

Change History

Version	Date	Author	Reason
1.0	March 2011	Yulia Gurtovaya (Specialist Registrar), Samantha Low (Consultant Obstetrician)	Trust requirement
2.0	January 2013	Maged Shendy (Specialist Registrar) , Pat Street (Consultant Obstetrician)	Reviewed
3.0	May 2015	J Siddall (Consultant Obstetrician)	Reviewed
4.0	July 2017	J Siddall	Reviewed, minor changes throughout

1.0 Overview:

Thrombocytopenia occurs in 8-10% of all pregnancies. The severity is classified as follows

- Mild: >100
- Moderate: 50 -100
- Severe: <50

In pregnancy most cases are mild and benign, but it can be associated with severe complications for mother and baby.
In cases where the platelet count is <80, discussion with a consultant haematologist is advised.

2.0 Signs (usually only present if platelets <50):

- Petechiae
- Nose bleeds
- Rarely: haematuria, gastrointestinal bleeding.

3.0 Possible Causes:

Diagnosis	Proportion	Pathophysiology
Gestational Thrombocytopenia	About 75%	Physiological dilution, accelerated destruction
Immune Thrombocytopenic Purpura (ITP)	About 3%	Immune destruction, suppressed production
Thrombotic Thrombocytopenic Purpura (TTP)		Peripheral consumption, microthrombi
Haemolytic Uraemic Syndrome (HUS)		Peripheral consumption, microthrombi
Pre-eclampsia, Eclampsia, Haemolysis, Elevated liver enzymes and low platelet count syndrome (PET, HELLP)	About 15-20%	Peripheral consumption, microthrombi
Hereditary thrombocytopenia		Bone marrow underproduction
Pseudo thrombocytopenia		Laboratory artefact
Viral infections: HIV, Epstein-Barr virus		Secondary autoimmune thrombocytopenia
Medications: heparin-induced		Bone-marrow suppression
Leukaemia/Lymphoma		Failure of Platelet production, bone marrow infiltration
Severe Vitamin B12 or Folate Deficiency		Failure of Platelet production
Splenomegaly		Splenic Sequestration

The section below describes optimum management based on the different diagnoses of thrombocytopenia. Read with CARE

4. Gestational Thrombocytopenia

4.1 Presentation / Diagnosis:

- Usually mild to moderate; platelet count > $80x10^9$/L
- Incidental finding
- Diagnosis of exclusion
- No previous history
- No symptoms of bleeding
- Typically occurs in 3rd trimester
- Spontaneous resolution
- May recur in subsequent pregnancy

4.2 Management:

4.2.1 Antenatal:

- **Refer for Consultant care**
- Exclude pathological causes
- Monitor platelet count every 4-6 weeks
- If moderate or severe: anaesthetic referral

4.2.2 Labour/Delivery:

- Avoid traumatic vaginal delivery to minimise maternal risk of haematoma formation
- Caesarean section for obstetric reasons only
- Epidural is safe if count above $80x10^9$/L
- If maternal count <$80x10^9$/L – cord sample should be taken at delivery and neonatal count days 1 & 4

4.2.3 Postnatal:

- Verify that counts returns to normal after delivery

5. Immune Thrombocytopenic Purpura (ITP)

5.1 Presentation / Diagnosis:

- May show: purpura, bruising, mucosal bleeding
- Asymptomatic
- Diagnosis of exclusion;
- Previous history;
- Platelet antibodies: lacks sensitivity and specificity
- Glycoprotein-specific antibodies
- Antibodies can cross placenta and cause fetal thrombocytopenia

5.2 Management:

5.2.1 Antenatal:

- Multidisciplinary care with Haematologist
- Optimize prior to pregnancy (azathioprine)
- Monitor platelet count
- Anaesthetic referral
- Treatment if symptoms or count $<20x10^9$/L at any stage of pregnancy or $<50x10^9$/L in late pregnancy without symptoms, consider, in consultation with Haematologist:
  1. Prednisolone 20 mg daily (start dose);
  2. iv IgG;
  3. Anti-D in Rh –positive women
  4. platelet transfusion
  5. Azathioprine

5.2.2 Labour/Delivery:

- Have platelets available if count $<50x10^9$/L (Discuss with consultant Obstetrician, Haematologist and Anaesthetist)
- In general, avoid epidural if count $<80x10^9$/L although a consultant anaesthetist may agree on a case by case basis
- Avoid traumatic delivery, fetal blood sampling (FBS), fetal scalp electrode (FSE)
- Caesarean section for obstetric reasons only
- Cord sample at delivery; Neonatal platelet count days 1 & 4

5.2.3 Postnatal:

- Platelet count daily until day 2-5
- If count <20x10^9/L or symptomatic – perform USS of brain and treat with iv IgG;
- Platelet transfusion if heavy bleeding

6. Thrombotic Thrombocytopenic Purpura (TTP)

6.1 Presentation / Diagnosis:

Life-threatening disorder with five of signs due to a severe deficiency of vW's factor-cleaving protein:

- microangiopatic haemolytic anaemia
- thrombocytopenia
- neurological symptoms (from headache to coma)
- renal dysfunction;
- fever

6.2 Diagnosis:

- ADAMTS13 levels;
- Low platelet count,
- Abnormal U&E

6.3 Management:

- Multidisciplinary management with Haematologist
- Urgent plasma exchange may be required until platelet count is normal;
- High doses of steroids
- Platelet transfusion – CONTRAINDICATED
- Anaesthetic involvement
- Central line
- Delivery does not improve outcome unless poor response to treatment

7. Haemolytic Uraemic Syndrome (HUS)

7.1 Presentation / Diagnosis:

- Associated with *E.coli* infection
- Microangiopatic haemolytic anaemia
- Thrombocytopenia
- Renal involvement
- Often postpartum

7.2 Management:

- Supportive management
- Renal dialysis
- Red cell transfusion
- Caesarean section for obstetric reasons

8. Drug induced

8.1 Diagnosis:

- History of the use of the drug (heparin)

8.2 Management:

- Stop use of the drug
- Use the alternative for Heparin – Danaparoid;
- Check platelet count weekly for the first 3 weeks after commencing heparin in pregnancy.

9. Pre-eclampsia, Eclampsia, Haemolysis, Elevated liver enzymes and low platelet count syndrome (PET, HELLP)

See Hypertension guideline (GL952)

10. Safe levels for interventions:

Intervention	Platelet count
Antenatal, no invasive procedures planned	>20
Vaginal delivery	>40
Operative or instrumental delivery	>50
Epidural anaesthesia	>80

11. Management of the neonate:

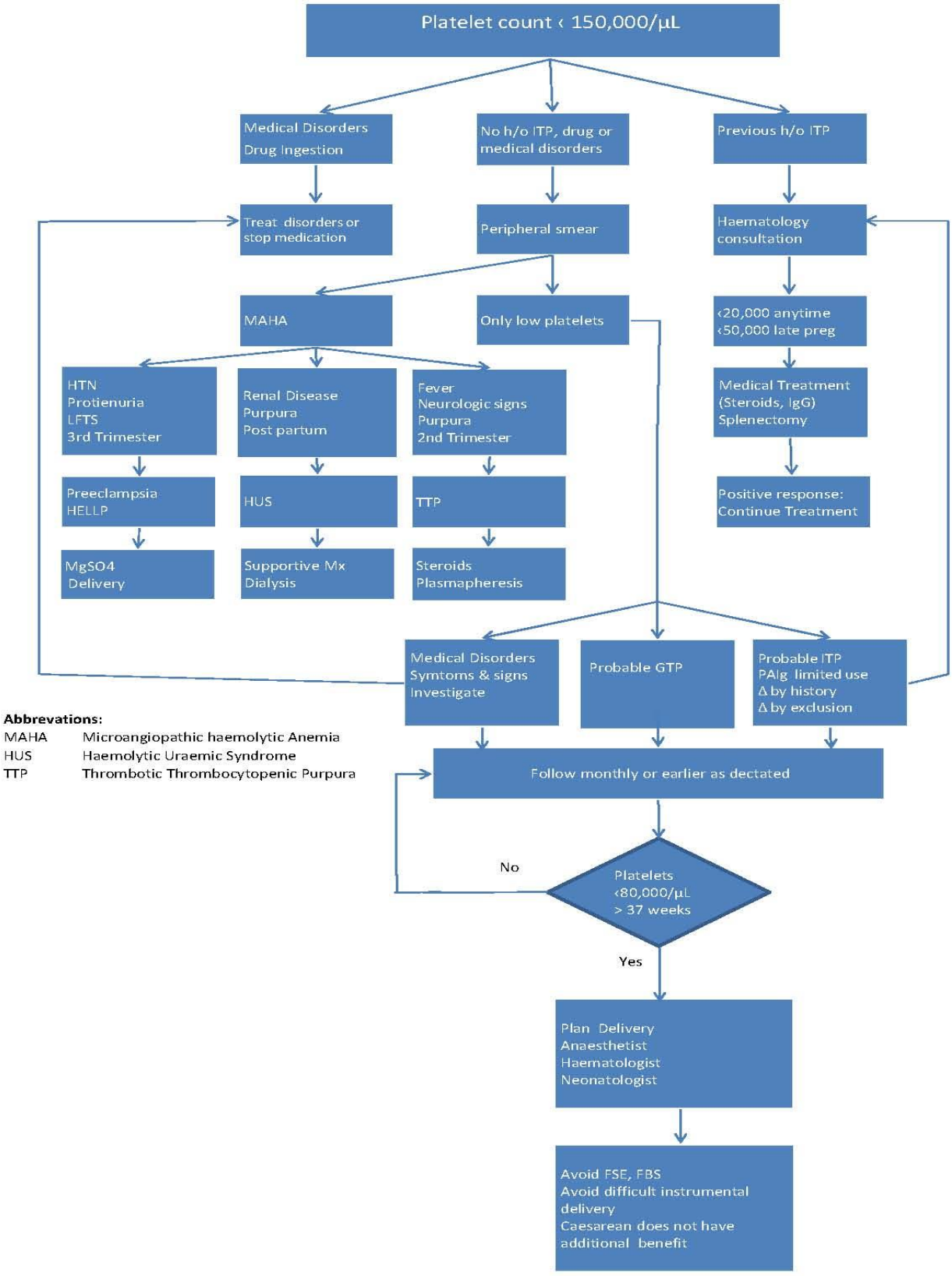
Neonate: antibodies IgG can cross placenta and cause neonatal thrombocytopenia – 14-37%, so avoid FSE, FBS, high or mid-cavity operative delivery, alert neonatal team, cord blood sample should be taken at delivery and neonatal platelet counts on days 1 & 4. Avoid Vitamin K IM until the count is known.

12. References:

12.1 Bethan Myers. Review Thrombocytopenia in pregnancy. TOG 2009;11:177-183

12.2 James D.K., Steer P.J.,Weiner C.P., Gonik B. High risk pregnancy management options. 3rd edition. Chapter 41; 901-911.

Process Chart for Thrombocytopenia in Pregnancy Management



Abbrevations:

MAHA	Microangiopathic haemolytic Anemia
HUS	Haemolytic Uraemic Syndrome
TTP	Thrombotic Thrombocytopenic Purpura

Author:	Jane Siddall	Date:	October 2017
Job Title:	Consultant Obstetrician	Review Date:	October 2019
Policy Lead:	Group Director Urgent Care	Version:	V4.0 ratified 6/10/17 Mat CG mtg
Location:	Policy hub/ Clinical/ Maternity/ Medical conditions & complications/ GL927		