HEALTH HOLDING

HAFER ALBATIN HEALTH CLUSTER
MATERNITY AND CHILDREN HOSPITAL

Department:	Provision of care		
Document:	Multidisciplinary Policy and Procedure		
Title:	Management of Thromboembolic Disease in Pregnancy and Puerperium		
Applies To:	All Health Care Professionals		
Preparation Date:	January 08, 2025	**Index No:**	PC-MPP-023
Approval Date:	January 22, 2025	**Version :**	4
Effective Date:	February 22, 2025	**Replacement No.:**	MS-MPP-005(3)
Review Date:	February 22, 2028	**No. of Pages:**	4

1. PURPOSE:

1.1 To provide guidelines based on clinical evidence where available, regarding the immediate investigation and management of women in whom venous thromboembolism (VTE) is suspected in Gynecology and Obstetrics (i.e. during pregnancy or the puerperium).

2. DEFINITONS:

2.1 **Deep Vein Thrombosis (DVT)** – a thrombus or blood clot partially blocking the deep veins (usually in the lower limb or pelvis).

3. POLICY:

3.1 All women should have their risk of venous thromboembolism (VTE) assessed.
3.2 Any women with signs and symptoms suggestive of VTE should have objective testing performed expeditiously and treatment with low-molecular-weight heparin until the diagnosis us excluded by objective testing, unless treatment is strongly contraindicated.
3.3 Individual hospitals should have an agreed protocol for the objective diagnosis of suspected VTE during pregnancy.
3.4 Maternity units should develop guidelines for the administration of the intravenous unfractionated heparin.
3.5 Management should involve a multidisciplinary resuscitation team including senior physicians, hematologists, obstetricians and radiologist.
3.6 Compression duplex ultrasound should be undertaken where there were clinical suspicions of DVT. If ultrasound is negative and there is low level of clinical suspicion, anticoagulant treatment can be discontinued.
3.7 Where there is clinical suspicion of acute PTE, a chest x-ray should be performed.
3.8 Alternative or repeat testing should be carried out where V/Q scan or CTPA and duplex Doppler are normal but the clinical suspicion of PTE is high. Anticoagulant treatment should be continued until PTE is definitively excluded.
3.9 Women with suspected PTE should be advised that V/Q scanning carries a slightly increased risk of childhood cancer compared with CPTA (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, background risk of 1200 for study population).
3.10 Where feasible, women should be involved in the decision to undergo CTPA or V/Q scanning. Ideally informed consent should be obtained before these test are undertaken.

4. PROCEDURE:

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

4.2 Performing a thrombophilia screen prior to therapy is not routinely recommended. When undertaken, thrombophilia screens should be interpreted by clinicians (usually hematologist) with specific expertise in the area.

4.3 In clinically suspected DVT or PTE, treatment with LMWH should be given.

4.4 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 90kg or more) or with complicating factors (for example with renal impairment or recurrent VTE) putting them at high risk.

4.5 Routine platelet count monitoring should not be carried out (unless unfractionated heparin has been given).

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

4.7 Intravenous unfractionated heparin is the preferred treatment in massive PTE with cardiovascular compromise.

4.8 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 PTE is confirmed or, in extreme circumstances prior to confirmation, immediate thrombolysis should be considered.

4.9 Intravenous unfractionated heparin is the traditional method of heparin administration in acute VTE and remains the preferred treatment in massive PTE because of its rapid effect and extensive experience of its use in this situation. One regimen for the administration of intravenous, unfractionated heparin is:

- 4.9.1 Loading dose of 80 units/kg, followed by a continuous intravenous infusion of 18 units/kg/hr
- 4.9.2 If a woman has received thrombolysis, the loading dose of heparin should be omitted and an infusion started at 18 units/kg/hr.
- 4.9.3 It is mandatory to measure activated partial thromboplastin time (APTT) 4-6 hours after the loading dose, 6 hours after any dose change and then at least daily when in the therapeutic target APTT ratio is usually 1.5-2.5 times the average laboratory control value.
- 4.9.4 Using this weight-adjusted regimen, the infusion rate should be adjusted according to APTT.
- 4.9.5 Loading dose of 80 units/kg, followed by a continuous intravenous infusion of 18 units/kg/hr

4.10 In the initial management of DVT, the leg should be elevated and a graduated elastic compression stocking applied to reduce edema. Mobilization with graduated elastic compression stockings should be encouraged.

4.11 Consideration should be given to the use of a temporary inferior vena caval filter in the perinatal period for women with iliac vein VTE, to reduce the risk of PTE or in women with proven DVT and who have continuing PTE despite adequate anticoagulant.

4.12 Treatment with therapeutic doses of subcutaneous LMWH should be employed during the remainder of the pregnancy.

4.13 Outpatient follow-up should include clinical assessment and advice with assessment of blood platelets and peak anti-Xa levels if appropriate.

4.14 Women receiving therapeutic-dose unfractionated heparin should have their platelet count monitored at least every other day until day 14 or until the unfractionated heparin is stopped, whichever occurs first.

4.15 Pregnant women who develop heparin-induced thrombocytopenia or have heparin allergy and require continuing anticoagulant therapy should be managed with the heparinoid, danaparoid sodium or fondaparinux, under specialist advice.

4.16 Anticoagulant therapy during labor and delivery.

- 4.16.1 The women taking LMWH for maintenance therapy should be advised that once she is established in labor or thinks that she is in labor, she should not inject any further heparin
- 4.16.2 Where delivery is planned, LMWH maintenance therapy should be continued 24 hours before planned delivery.
- 4.16.3 Regional anesthetic or analgesic techniques should not be undertaken until at least 24 hours after the last dose of therapeutic LMWH.

4.16.4 A thromboprophylactic dose of LMWH should be given by 3 hours after a cesarean section (more than 4 hours after removal of the epidural catheter, if appropriate).

4.16.5 The epidural catheter should not be removed within 12 hours of the most recent injection.

4.16.6 In women receiving therapeutic doses of LMWH, wound drains (abdominal and rectus sheath) should be considered at cesarean section and the skin incision should be closed with staples or interrupted sutures to allow drainage of the hematoma.

4.16.7 Any woman who is considered to be a high-risk of hemorrhage and in whom continued heparin treatment is considered essential should be managed with intravenous, unfractionated heparin until the risk factors for hemorrhage have resolve.

4.17 Postnatal Anticoagulation

4.17.1 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.

4.17.2 Women should be offered a choice of LMWH (unfractionated or LMWH) nor warfarin is contraindicated in breastfeeding.

4.17.3 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 o]f warfarin particularly during the first 10 days of treatment.

4.17.4 Postpartum warfarin should be avoided until at least the third day and for longer in women at increased risk of post-partum hemorrhage.

4.18 Prevention of post-thrombotic leg syndrome

4.18.1 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.

4.19 Postnatal Clinic Review

4.19.1 Postnatal review for women who develop VTE during pregnancy of the puerperium should, whenever possible, be at an obstetric medicine clinic or a joint obstetric hematology clinic.

5. MATERIALS AND EQUIPMENT:

5.1 Calculation of initial doses of drugs by early pregnancy weight

5.2 Admission Form

5.3 OBS-GYNE History Sheet

6. RESPONSIBILITIES:

6.1 All health care professionals in OBS department

7. APPENDICES:

7.1 N/A

8. REFERENCES:

8.1 Thromboembolic Disease in Pregnancy and the Puerperium: Acute Management, RCOG Green Top Guideline No. 2810 of February 2007

8.2 Reducing the Risk of Thrombosis and Embolism During Pregnancy and the Puerperium, RCOG Green Top Guideline No. 37. Nov 2009.

8.3 ACOG Practice Bulletin Number 123, September 2011

7. APPENDICES:

7.1 Training Requirements
7.2 Monitoring compliance with procedural documents
7.3 Obstetric thromboprophylaxis risk assessment and management

8. REFERENCES:

8.1 RCOG (Royal College of Obstetricians and Gynecologists) Green-top Guideline No. 37a
8.2 Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI) Third Edition
8.3 Venous Thromboembolism: reducing the risk: Reducing the risk of venous Thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital: NICE Clinical Guideline 92, Jan 2010
8.4 Venous Thromboembolism Prevention Quality Standard: NICE, June 2010

9. APPROVALS:

	Name	Title	Signature	Date
Prepared by:	Dr. Wesam AlAshry	Head of Obstetrics and Gynecology		January 08, 2025
Reviewed by:	Dr. Mogahid Mahmoud Ali ElHasan	Medical Specialist		January 12, 2025
Reviewed by:	Mr. Sabah Turayhib Al Harbi	Nursing Director		January 12, 2025
Reviewed by:	Ph. Mutlaq Al Dhafeeri	Head of Pharmaceutical Care		January 13, 2025
Reviewed by:	Dr. Ahmad Al Nussairy	Head of Radiology		January 13, 2025
Reviewed by:	Mr. Abdulelah Ayed Al Mutairi	QM&PS Director		January 14, 2025
Reviewed by:	Dr. Tamer Mohamed Naguib	Medical Director		January 15, 2025
Approved by:	Mr. Fahad Hazam Al - Shammari	Hospital Director		January 22, 2025

9. APPROVALS:

	Name	Title	Signature	Date
Prepared by:	Dr. Wesam Alashry	OBs- Gyne Consultant		January 08, 2025
Prepared by:	Dr. Abdalla Albasha	OBs- Gyne Consultant		January 08, 2025
Prepared by:	Dr. Faiza Ghafoor	OBs- Gyne Consultant		January 08, 2025
Reviewed by:	Dr. Mohanad Yaghmour	Head of Obstetrics and Gynecology		January 12, 2025
Reviewed by:	Dr. Shaimaa Bayoumi	Clinical Audit		January 12, 2025
Reviewed by:	Mr. Sabah Turayhib Al Harbi	Nursing Director		January 13, 2025
Reviewed by:	Ph. Mutlaq Al Dhafeeri	Head of Pharmaceutical Care		January 13, 2025
Reviewed by:	Dr. Ahmad Al Nussairy	Head of Radiology		January 14, 2025
Reviewed by:	Mr. Abdulelah Ayed Al Mutairi	QM&PS Director		January 14, 2025
Reviewed by:	Dr. Tamer Mohamed Naguib	Medical Director		January 15, 2025
Approved by:	Mr. Fahad Hazam Al - Shammari	Hospital Director		January 22, 2025