

Management of the Pregnant Patient in Critical Care

1. Perform a **pregnancy test** (urinary beta-HCG) on **all** female patients of child-bearing age (aged 11-55 years) admitted to ICU, unless this has been performed and clearly documented earlier in the hospital admission.
2. **Discuss with the on-call obstetric team** (see below for site specific contact details) any critically-ill pregnant patient and arrange an urgent ultrasound. This is to assess whether early delivery is indicated as part of maternal resuscitation, to assess viability of the pregnancy and to guarantee obstetric follow-up. Ensure the neonatal team are aware of any viable (>22 weeks gestation) pregnancies.

	RIE	SJH	WGH
Consultant Obstetrician	Bleep 1617	Bleep 3898	Bleep 1617
Obstetric Trainee	Bleep 1616	Bleep 3558	Bleep 1616
Consultant Obstetric Anaesthetist	Bleep 2203	Bleep 3590	Bleep 2203
Obstetric Anaesthetic Trainee	Bleep 2204	Bleep 3561	Bleep 2204
Labour Suite	22544/22542	54125	22544/22542

3. A **MEWS** (maternal early warning score) chart should be referred to for physiological parameters (this can be found in the Obstetric folder at the nurses stations). These charts take into account the physiological changes with pregnancy and adjust the triggers for concern, in particular those for blood pressure as hypertension may indicate pre-eclampsia.
4. Nurse pregnant patients with significant intra-abdominal mass (typically > 20 weeks' gestation) sitting up is possible or if supine in a **left-tilted position** using pillows or a wedge. This is to prevent aorto-caval compression from compromising maternal cardiac output and the utero-placental circulation.
5. Pregnant critically-ill patients requiring intubation are at **high risk of aspiration**. Administer **ranitidine** (50mg iv or 150mg oral) pre-intubation when time allows. Administer **sodium citrate** 0.3M (30ml orally) immediately prior to intubation. This is available from the obstetric theatres. **Be aware:** intubation of the pregnant patient can be difficult.
6. In all female, critically-ill patients of child-bearing age, **consider obstetric complications** until pregnancy has been ruled out by a negative pregnancy test (remember all types of contraception can fail). These include:
 - a. Eclampsia/pre-eclampsia (hypertension, acute liver failure, seizure, pulmonary oedema)
 - b. Amniotic fluid embolus (cardiovascular collapse, coagulopathy)
 - c. Antepartum haemorrhage
 - d. Pulmonary embolism
 - e. Cerebral venous sinus thrombosis (headache and reduced consciousness) – this requires a CT venogram to exclude. A non-contrast CT head is insufficient.
 - f. Peri-partum cardiomyopathy, aortic dissection and myocardial infarction
 - g. Obstetric sepsis/chorio-amnionitis
 - h. Thrombotic thrombocytopenic purpura (thrombocytopenia, microangiopathic haemolytic anaemia, CNS signs, AKI, fever).
7. The obstetric team should liaise with the Midwife Coordinator to provide a midwife, and should arrange for **CTG/continuous fetal monitoring** if indicated.
8. If the pregnancy is viable (>22 weeks gestation), a **neonatal resuscitaire** should be immediately available in the event of peri-mortem caesarean section or delivery. Please refer to the obstetric patient checklist to ensure all the relevant equipment is to hand. A **peri-mortem caesarean section kit** should be immediately available at the bedspace of any pregnant ICU patient.

Critical Care Guidelines FOR CRITICAL CARE USE ONLY

9. In a cardiac arrest involving a pregnant patient, dial 2222 and state “**obstetric emergency cardiac arrest in**”. A perimortem caesarean section should be started within four minutes. The baby should be delivered within five minutes from onset of cardiac arrest. Do not wait for the arrival of the neonatal team to start the perimortem caesarean section – it is being done to save the life of the mother.
10. Pregnant women are at high risk of venous thromboembolic disease before and after delivery. Follow **NHS Lothian “Thromboprophylaxis in Pregnancy” guideline for antenatal patients** - <http://intranet.lothian.scot.nhs.uk/Directory/ReproductiveMedicine/PoliciesAndGuidelines/Documents/Maternity%20Pan%20Lothian/Antenatal/Thromboprophylaxis%20in%20pregnancy.pdf> and the **NHS Lothian “Postnatal Thromboprophylaxis” guideline for postnatal patients** - <http://intranet.lothian.scot.nhs.uk/Directory/ReproductiveMedicine/PoliciesAndGuidelines/Documents/Maternity%20Pan%20Lothian/Postpartum/Postnatal%20Thromboprophylaxis.pdf> unless an absolute contra-indication exists.

	ANTENATAL	POSTNATAL
Weight (kg)*	Dose of Dalteparin (units)	Dose of Dalteparin (units)
<50	2500	2500
50-90	5000	5000
91-130	7500	7500
131-170	10000	10000
>170	75units/kg/day	

*Use booking weight if a recent weight is not available.

Consider additional mechanical thromboprophylaxis especially if bleeding/coagulation a concern.

11. When caring for a recently pregnant patient, please consider breastfeeding/expressing and contact with baby and close family members. For assistance call labour suite (numbers as above) or neonatal services. RIE Neonatal Unit (NNU) phone 22601. SJH Special Care Baby Unit (SCBU) phone 54394.
12. Use the ‘**Handover Sheet for Obstetric Patients Requiring Admission to General Critical Care**’ (available on the NHS Lothian Critical Care Guidelines intranet site) to state physiological goals. This provides contact numbers for on-call obstetric and obstetric anaesthesia teams, as well as the labour ward coordinator.
13. Upon discharge to labour suite HDU, please complete the “**Handover Sheet for Obstetric Patients being discharged from General Critical Care**”. This will provide the receiving team with a summary of the patients critical care stay and will highlight ongoing care requirements.
14. For further information please see the “Care of pregnant or recently pregnant (up to 6 weeks post delivery) woman in a non-obstetric area” on the Intranet – Directory>>Policy Hub>>Policies, Procedures and Guidelines. <http://intranet.lothian.scot.nhs.uk/Directory/PolicyHub/Documents/Care%20of%20Pregnant%20or%20recently%20pregnant%20women%20in%20non-obstetric%20area%20Guideline%202018.pdf>

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