



PROTOCOL FOR THE ACUTE MANAGEMENT OF ABDOMINAL TRAUMA IN PREGNANCY

A. DEFINITIONS

Major trauma:

- ♦ Trauma associated with clinical signs i.e. ecchymosis, haematoma or bruising on the abdomen.
- ♦ Unstable patient
- ♦ Associated with
 - Motor vehicle accidents
 - Assault with direct abdominal injury

Minor Trauma:

- ♦ No visible signs of abdominal injury, with no other associated trauma or symptoms.

B. MOST COMMON CAUSES OF ABDOMINAL TRAUMA IN PREGNANCY

- ♦ Motor vehicle accidents
- ♦ Assault
- ♦ Domestic Violence and abuse
- ♦ Falls
- ♦ Associated illicit drug use in up to 20% of cases

C. RISK ASSOCIATED WITH ABDOMINAL TRAUMA IN PREGNANCY

i. PREGNANCY RELATED COMPLICATIONS

- ✗ Abruption placentae
- ✗ Preterm labour
- ✗ Fetal-Maternal Haemorrhage
- ✗ Uterine rupture

ii. OTHER COMPLICATIONS

- ✗ Splenic and hepatic trauma/rupture (More common in third trimester)
- ✗ Bowel injury (less likely in the pregnant women)

NB! For the purpose of the protocol viability will be defined as-

Sure gestation of 27w0d and EFW of 800g.

D. MANAGEMENT: INITIAL ASSESSMENT AND WORK-UP

[INITIAL MANAGEMENT OF BLUNT ABDOMINAL TRAUMA IN PREGNANCY]

1. Primary Survey and Stabilisation of patient:

- 1.1. Evaluate and manage circulation, airway, breathing [Blood gas as necessary]

2. General assessment:

- 2.1. Obtain history, especially if any symptoms of vaginal bleeding, abdominal pain or symptoms suggestive of rupture of membranes.
- 2.2. Check antenatal card for MSU, HIV, Syphilis results and normal detail scan.
- 2.3. Ensure correct gestation (Sure gestation = early ultrasound $\pm$ Dates / SF)

NB! If patient is **unbooked** or **lost her card**:

- Check for results on the computer, if not do rapid HIV, Rh and Syphilis tests.
- Request registrar on call to do basic scan, exclude gross abnormality and get EFW (Complete the basic scan report form)

!But do not delay management while waiting for the above!

- 2.4. General examination

- 2.4.1. Maternal vital signs, urinalysis, including hydration status

- 2.4.2. Assess uterine activity and tenderness by abdominal palpation

3. Perform sterile speculum examination. (Only if patient is symptomatic)

- 3.1. If evidence of ruptured membranes – Follow protocol for PPRM
- 3.2. Look for vaginal lacerations, pelvic trauma or foreign bodies

4. Perform bimanual and rectal examination

- 4.1. In cases of major / significant trauma
- 4.2. Perform digital cervical assessment [*Only with intact membranes!*]
To determine dilation, effacement, position, consistency

5. Side-room and special investigation:

- 5.1. Ward Hb, Bloodgas
- 5.2. Mid-stream urine specimen for culture and sensitivity

NB! → In all pregnancy abdominal trauma cases:

- ✓ Ensure all **Rhesus Negative** women received a dose of **Rh D immunoglobulin**
- ✓ Do **Kleinhauer-Betke** acid elution test if **fetal-maternal haemorrhage** is suspected
- ✓ Involve the **Social Worker** if domestic violence or abuse is suspected
- ✓ Ensure that all documentation of the assault case was done (**J88**)

E. MANAGEMENT: MINOR TRAUMA IN PREGNANCY:

1. Sure gestation < 26w6d

[If unsure gestation then EFW < 799g]

- 1.1. Treat as non-pregnant patient.
- 1.2. Asymptomatic patients with normal vitals can be treated at their local clinic/hospital.
- 1.3. Patients should receive counselling on symptoms and signs to look out for.
- 1.4. If complaining of decreased or no fetal movements then the presence of the fetal heart can be confirmed with a Doppler/Doptone and if present and normal then for discharge; if absent then she must be referred to a District (level 1) hospital.

2. Sure gestation ≥ 27w0d

[If unsure gestation then EFW ≥ 800g]

- 2.1. Asymptomatic patients with normal vitals and with normal fetal movements can be treated at their local clinic/hospital.
- 2.2. Patients should receive counselling on symptoms and signs to look out for.
- 2.3. If complaining of decreased or no fetal movements then she must be referred to a District (level 1) hospital.
- 2.4. The presence of the fetal heart can be confirmed with a Doppler/Doptone
 - If present: Then do a 10 min CTG evaluation
 - If absent then she must be referred to a Regional (level 2) hospital

If a patient is discharged she must be fully counselled on possible complications and advised to return if:

- Any signs of preterm labour
- Abdominal pain and / or vaginal bleeding
- Change in fetal movements

F. MANAGEMENT: MAJOR TRAUMA IN PREGNANCY

1. Sure gestation < 24w0d

[If unsure gestation then EFW < 550g]

- 1.1. Treat as non-pregnant patient
- 1.2. Patient needs to be stabilized and referred to her local trauma/emergency unit, District or Regional Hospital.
- 1.3. Once stabilised the obstetric registrar can be contacted to evaluate the pregnancy.

2. Sure gestation 24w0d – 26w6d

[If unsure gestation then EFW 550 g - 799g]

- 2.1. Patient needs to be stabilised and referred to her local trauma/emergency unit, District or Regional Hospital.
- 2.2. Once stabilised the obstetric registrar can be contacted to evaluate the pregnancy.

3. Sure gestation ≥ 27w0d

[If unsure gestation then EFW ≥ 800g]

- 3.1. Patient need to be stabilised first and referred to level 2 hospital
- 3.2. If stable enough for theatre then do continuous CTG for 4h in labour ward.
 - A course of antenatal steroids should be given
 - If asymptomatic and a normal CTG for 4h then do intermittent 6hly CTG for 24h in labour ward
 - If symptomatic or suspicious CTG during the first 4h then do continuous CTG for 24h in labour ward
 - If at any stage there is a pathological CTG tracing, the patient must be taken immediately for a caesarean section, surgeons should be notified and be present at surgery to assess the abdominal cavity for any surgical trauma.

G. MANAGEMENT: ROLE OF TOCOLYSIS IN ABDOMINAL TRAUMA:

1. Value

- 1.1. Tocolytic therapy has been shown to prolong pregnancy in preterm labour to provide benefit of administering antenatal corticosteroids.
- 1.2. Tocolytic therapy may play a role in safe transport for women with preterm labour.
- 1.3. *Routine tocolysis is not indicated in abdominal trauma.*
- 1.4. In cases where patients present in preterm labour after abdominal trauma before tocolytics are given there should:
 - Be no suggestion of an abruption
 - There should be no contraindication for tocolysis
 - Non-pregnancy related complications should be excluded

2. Indication for Tocolysis

- 2.1. Women in preterm labour 24w0d-33w6d sure gestation or EFW 800g – 1850g if unsure gestation.

3. Contraindications for Tocolysis

- 3.1. Mother does not consent to suppression
- 3.2. If $\geq 34w0d$ sure gestation or EFW $\geq 1850g$ in unsure gestation
- 3.3. Pathological or suspicious fetal heart rate pattern
[CTG monitoring in sure gestation $> 27w0d$ or Unsure gestation EFW $> 800g$]
- 3.4. Lethal fetal anomaly
- 3.5. Intra uterine fetal death
- 3.6. Suspected chorioamnionitis (clinical signs of infection)
- 3.7. Severe hypertensive conditions in pregnancy
- 3.8. Abruptio Placentae
- 3.9. Severe IUGR ($<3^{rd}$ percentile)

4. Relative contraindications for Tocolysis

(To be assessed and discussed with your consultant)

- 4.1. If less than 26w0d sure gestation or EFW $< 800g$ if the gestation is unsure
- 4.2. Ante-partum haemorrhage of unknown cause
- 4.3. HIV positive patients / immunocompromised patients

5. Drugs & Dose

- 5.1. No clear first line drug but the following drugs can be used
- 5.2. Calcium channel blocker: Nifedipine (Adalat®)

- ♦ Dose: 30 mg loading dose orally (do not chew or take sublingually) and 20 mg 3 hours later. If still contractions, continue with 20 mg 8 hourly per os for 48 hours.
- ♦ Contraindications: All cardiac diseases, hypotension and hypertensive diseases. (Unless discussed and decision made by consultant – make clear notes!)
- ♦ Side effects: Flushing, headache, dizziness, nausea

5.3. Prostaglandin synthetase inhibitor – Indomethacin (Indocid®)

- ♦ Dose: 100mg rectal suppository 12hly for 3 doses
Maximum 4 doses or 48hrs of treatment
- ♦ Contraindications: pre-existing gastrointestinal ulcers/lesions, known allergy to NSAIDS, significant renal or hepatic impairment, sure gestation of $\geq 32w0d$

NOTE! *If unsure gestation and EFW $\geq 1.6kg$ rather use Salbutamol if indicated.*

- ♦ Side effects: Nausea, heartburn, fluid retention, suppression of platelet function.

→ If at this stage tocolysis is not effective in stopping the contractions, the use of a β_2 stimulant as an adjunct (salbutamol) in the dose as below can be considered.

5.4. Beta-mimetic – Salbutamol (Ventolin®)

- ♦ Dose: 250 μg ($\frac{1}{2}$ ampoule diluted in 20ml saline) slowly IV as soon as possible
Can continue infusion: 2mg (4 ampoules) in 200ml saline at 1ml/minute and increase every 10 minutes by 1 ml/minute until maximum of 4ml/minute or pulse >120 bpm.
- ♦ Contraindication Cardiac arrhythmias, maternal tachycardia (pulse $> 110bpm$), all underlying cardiac and diabetic mothers. (Unless discussed and decision made by consultant – make clear notes!)
- ♦ Side effects Cardiac or cardiopulmonary arrhythmias, edema, myocardial ischemia, tachycardia, hypotension

NB! *Salbutamol infusions can only be started if the maternal monitoring can be done with continuous ECG and oxygen saturation monitoring
Keep pulse rate 110-120 bpm*

H. MANAGEMENT: ROLE OF ANTENATAL STEROIDS IN ABDOMINAL TRAUMA

1. Value

- 1.1. This is the most beneficial intervention for patients in true preterm labour
- 1.2. All symptomatic minor abdominal trauma and all major abdominal trauma patients should be evaluated for a course of steroids.

2. Indications

- 2.1. All pregnant women between 26w0d and 33w6d gestation who are at risk of preterm birth within 7days should receive single course of corticosteroids

3. Relative Contraindications

- 3.1. Severe maternal infection/septicaemia

4. Drugs and Dose

- 4.1. Betamethasone (Celestone®)
 - ♦ Dose: 12 mg IM repeat the same dosage after 24 hours
The first dose should be given as soon as possible (even at MOU)

NB! *The use of antenatal corticosteroids in pregnancies complicated by maternal diabetes mellitus is not contraindicated and the decision should be made with your consultant.*

5. Side-effects and complications:

- 5.1. May accentuate glucose intolerance/hyperglycaemia (avoid glucose screening for 48hrs and do not react on glucosuria)
- 5.2. Pulmonary edema

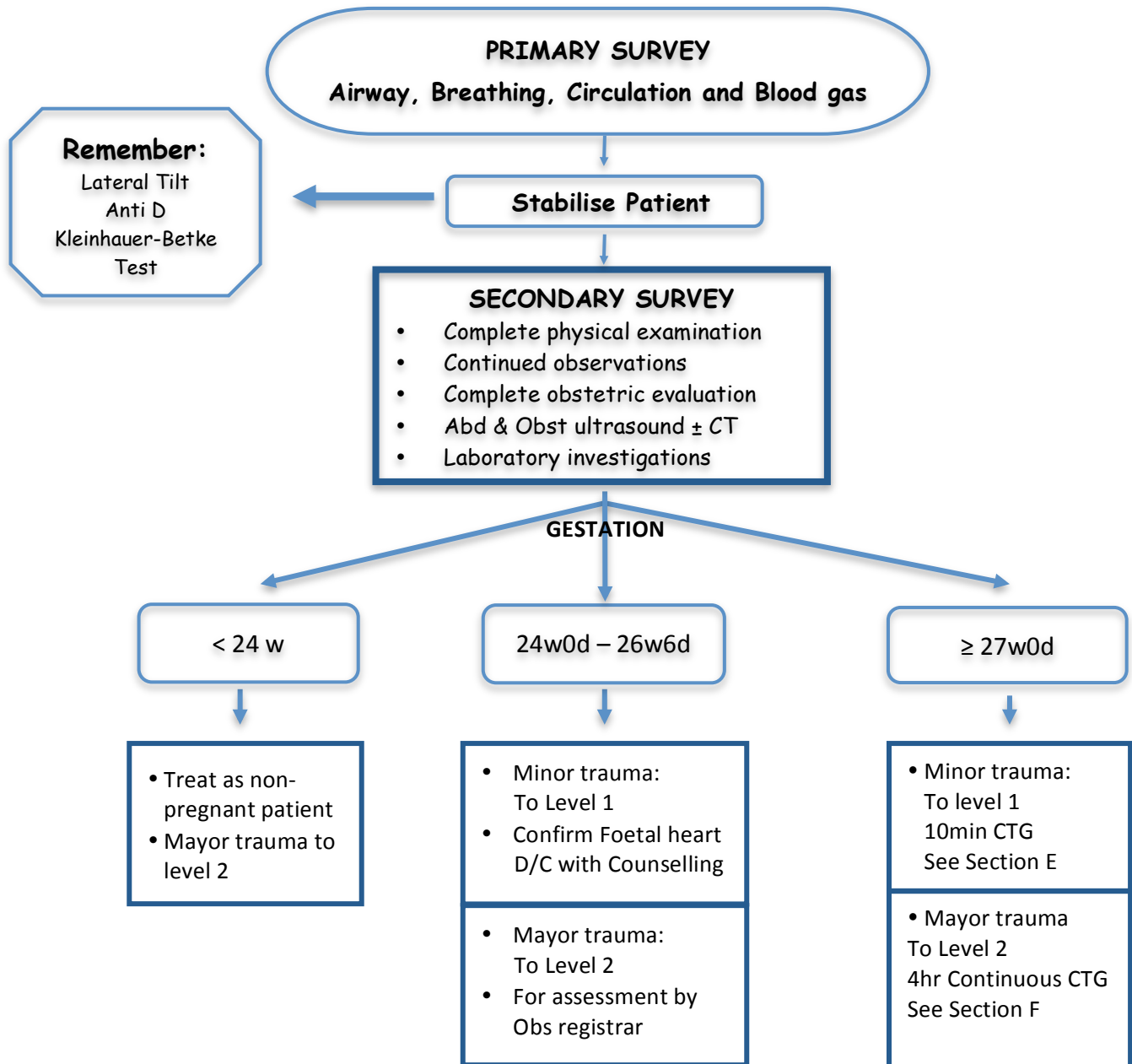
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EVIDENCE	Evidence basis for the above decision is available on request



Signed: GS Gebhardt

Head: general specialist services; Obstetrics and Gynaecology

Summary for Management of Abdominal Trauma in Pregnancy [>20weeks]



- **Discharge Criteria**
 - No signs of fetal compromise
 - No uterine activity
 - No ruptured membranes
 - No vaginal bleeding
 - 4 hours of normal electronic fetal monitoring (if viable)
- **To return if:**
 - ♦ Any signs of preterm labour
 - ♦ Abdominal pain and / or vaginal bleeding
 - ♦ Change in fetal movements