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Trust Guideline for the Management of Preterm birth (26^{+0} - 36^{+6} Weeks)

A clinical guideline recommended

For use in:	Maternity Directorate
By:	All Staff
For:	Patients with actual or suspected preterm labour
Division responsible for document:	Women and Children's Services
Key words:	Preterm labour, preterm birth
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Compliance links: *(is there any NICE related to guidance)*	NICE Preterm Labour and Birth Guideline NG20
If Yes - does the strategy/policy deviate from the recommendations of NICE? If so why?	No

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Version Number	Date of Update	Change Description	Author
9	10/04/2020	Changed nifedipine protocol to match BNF and added a protocol if immediate release nifedipine not available	Mr Charles Bircher, Mr Richard Smith
10	25/05/2020	Brand of swab used to detect ruptured membranes has changed	Mr Charles Bircher, Mr Richard Smith
11	12/11/2020	Addition of QUIPP app calculation and recommendation towards consideration of second dose of steroids following clinical governance 18/09/2020	Mr Charles Bircher, Mr Richard Smith, Mrs Beth Gibson

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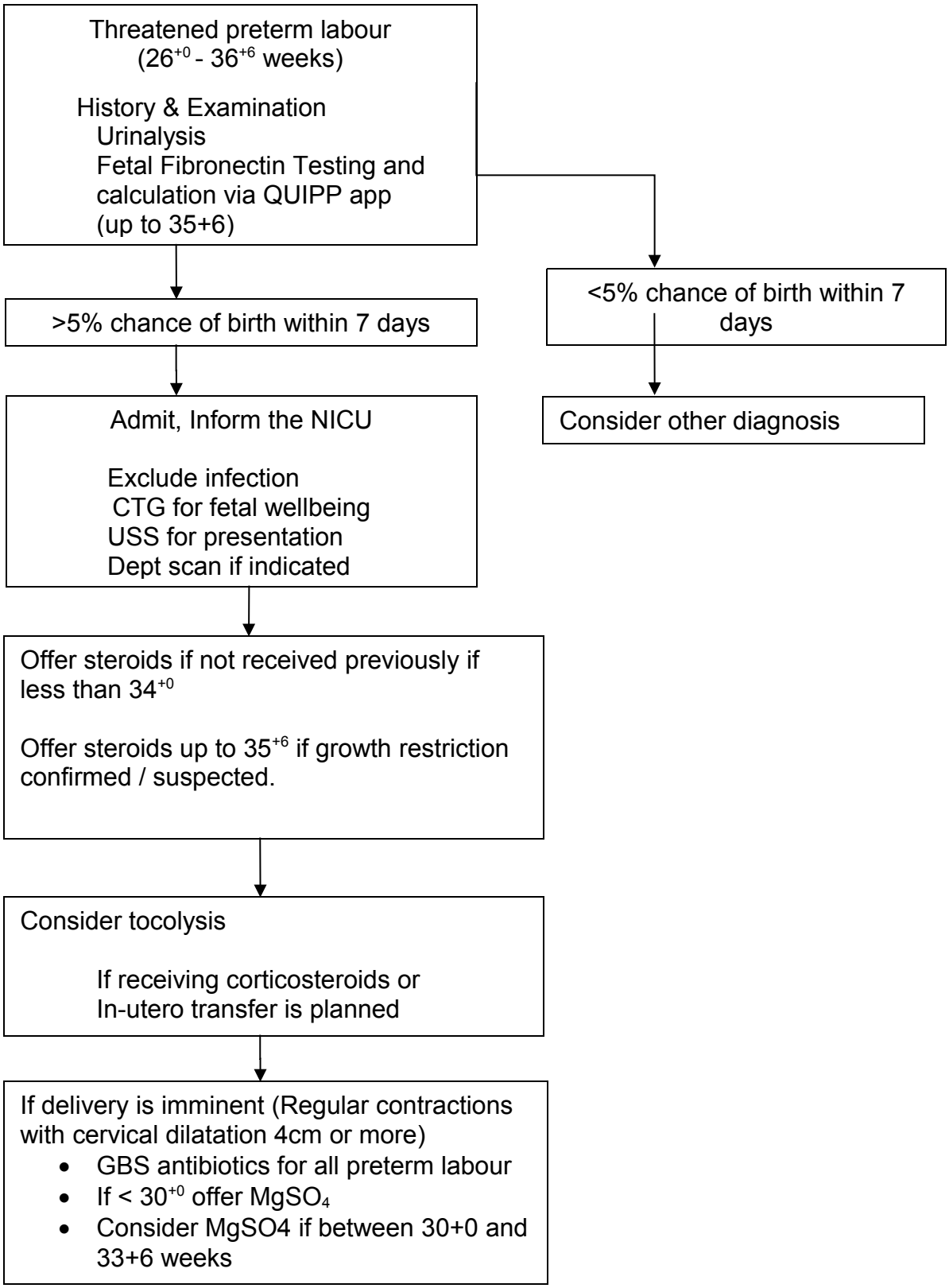
Algorithm for management of preterm labour



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Objective and Rationale

Preterm labour is defined as onset (spontaneous) of labour before 37 completed weeks of gestation and preterm birth is defined as birth at less than 37^{+0} weeks of gestation.

Intact survival of babies born after 27 weeks exceeds 50% and nearly 100% survival is expected of babies born after 32 week of pregnancy.

This guideline is aimed at optimising the management of women with preterm labour.

Scope of the guideline

This guideline covers preterm labour and preterm birth on or after 26^{+0} weeks of gestation. For gestations less than this, management should be according to 'Trust Guideline for the Management of Babies Born Extremely Preterm: Trustdocs Id 7508.

Broad recommendations

Initial assessment

Diagnosis of preterm labour can be difficult.

Clinical features useful in making an objective diagnosis include:

- History – regular painful contractions
- Abdominal examination – descent of the presenting part
- Fetal Fibronectin or AmniSure testing as appropriate – Trustdocs ID: 8893
- Individualised risk scoring via the Quipp App.
  https://quipp.org/symptomatic.html
- Vaginal examination for progressive cervical changes
- Avoid vaginal examination but perform a sterile speculum examination if PPROM

Other assessments should include:

- Assessment of fetal well being. This can be either by intermittent fetal heart auscultation or by CTG
- In-room ultrasound scan to confirm presentation
- Departmental ultrasound scan for fetal size and liquor volume if indicated
- Clinical evidence of infection
    - Pyrexia, tachycardia, uterine tenderness, offensive vaginal discharge and fetal tachycardia

Any woman suspected to be in preterm labour should be assessed by a member of the medical staff and decision for commencement of tocolysis or in-utero transfer should be made in discussion with the senior SpR on-call.

These women should be offered the RCOG patient information sheet on premature labour (https://www.rcog.org.uk/globalassets/documents/patients/patient-information-leaflets/pregnancy/pi-premature-labour.pdf)

Antenatal corticosteroids

Every effort should be made to initiate antenatal steroid therapy in all women between 26 and 33+6 weeks gestation who are at risk of preterm birth such as those with:

- Threatened preterm labour
- Antepartum haemorrhage
- Preterm rupture of the membranes
- Any condition requiring elective preterm delivery

Special circumstances

- Growth restriction: Pregnancies affected by fetal growth restriction and at risk of preterm birth should be considered for antenatal corticosteroids if less than 36^{+0} weeks gestation
- Chorioamnionitis: A course of antenatal corticosteroids may be started, but should not delay delivery if indicated by maternal or fetal condition
- Diabetes: Antenatal steroids must be used with caution in diabetic patients – please refer to guideline AO7 on "Intravenous insulin regime for pregnancy over 24 weeks gestation"

The steroids regimes of choice:

- Betamethasone or Dexamathasone Phosphate 12mg given IM in two doses 24 hours apart
- However, any regime with 24mg of either drug given in a 24-48 hour period seems reasonable

Optimal treatment delivery interval and repeat courses

The optimal treatment-delivery interval for administration of antenatal corticosteroids is after 24 hours but less than seven days after the administration of the second dose.

However, there is a trend towards benefit in babies delivered before, and after, the optimal treatment interval has elapsed. Therefore, treatment should be given even if delivery is anticipated within 24 hours.

The guidelines committee acknowledges the NICE Preterm Labour and Birth Guideline recommends "Do not routinely offer repeat courses of maternal corticosteroids"(1). However there is evidence that a repeat course of steroids, if given at least **7-14 days after** the initial course and prior to 34 weeks gestation, reduces respiratory complications for the fetus, with the side effect of a reduction in fetal weight and no known harm in childhood (2, 3). The American College of Obstetricians and Gynaecologists and the World Health Organisation both recommend a single repeat course if these criteria are met and there is an ongoing risk of preterm birth within the next 7 days (4, 5). Therefore, at the NNUH we recommend considering a second course

of steroids if it is more than 7-14 days since the original course and the woman is less than 34 weeks gestation, with consultant involvement in the decision.

Tocolysis

Though use of tocolytic drugs have been associated with a prolongation of pregnancy up to 7 days, no significant effect has been shown in reducing perinatal or neonatal morbidity.

Tocolysis should be considered if the few days gained would be put to good use, such as completing a course of corticosteroids or in-utero transfer. If one of these conditions is met tocolysis should be offered between 26+0 33+6 weeks.

As no benefit has been proven, maintenance tocolytic therapy is not recommended beyond 48 hours.

Tocolytic drugs should not be used when there is a contraindication to prolongation of pregnancy, such as:

- Lethal congenital or chromosomal malformation
- Intrauterine infection
- Severe pre-eclampsia
- Placental abruption
- Advanced cervical dilatation (>4cm)
- Evidence of fetal compromise or placental insufficiency

Senior opinion should be sought in the presence of following relative contraindications:

- Mild haemorrhage due to placenta praevia
- Suspicious or pathological CTG
- Fetal growth restriction
- Multiple pregnancy

<u>Tocolytic drugs and recommended dose regimes</u>

Nifedipine is recommended as the first choice in tocolysis. It is not currently licenced for use as a tocolytic in the UK.

- Site an intravenous cannula prior to commencement of treatment
- The BP should be checked prior to administration of each tablet and if the SBP<100 mmHg, the doctor should be contacted prior to drug administration
- The suggested regime of Nifedipine in the BNF is:
    - Immediate release, initially 20 mg, followed by 10–20 mg 3–4 times a day, adjusted according to uterine activity
- However if immediate release Nifedipine is not available the following regime can be used:
    - Initial dose: Nifedipine modified release (m/r) 20 mg

- After an hour if contractions persist, give Nifedipine m/r 10 mg orally every 6 hours for 48 hours as indicated

- Maximum dose is 60 mg/day

Contraindications to Nifedipine:

- Cardiac conducting defects
- Hypotension
- Left ventricular failure
- Hepatic and renal failure are relative contraindications for Nifedipine
- Caution should be exercised in:
  - Women with diabetes or in multiple pregnancy owing to the risk of pulmonary oedema
  - Women who are taking medicines that may interact with nifedipine (see BNF Appendix 1: Interactions under Calcium-channel Blockers)

Pharmacy hold as small stock of Atosiban for patients who are unable to be given nifedipine. Please consult the BNF and product information if needed.

The woman should be advised on side effects of nifedipine which include:

- Hypotension (though in normotensive women the effect on BP seems to be small and seldom severe enough to withdraw treatment)
- Palpitation
- Peripheral oedema
- Headaches
- Facial flushing
- Less common effects include constipation, dizziness, nausea, bradycardia, fatigue, rash and abnormal LFTs (though there are no long term effects on the liver)

Magnesium sulphate for prevention of cerebral palsy

MgSO4 has been shown to be neuroprotective against cerebral palsy and cystic periventricular leucomalacia (PVL).

- MgSO4 should be offered in women with imminent delivery <30^{+0} weeks, and considered between 30+0 and 33+6 weeks
- This should be administered if the birth is expected within the next 4-24 hours and should be continued for 24 hours or delivery, whichever occurs first. This would be expected in a woman with regular uterine contractions with a cervical dilatation of 4 cm or more

- Such treatment is recommended regardless of mode of delivery and corticosteroid administration
- An intravenous loading dose of 4g over 20-30 minutes followed by a maintenance dose of 1g/hr should be given
- Monitoring should include maternal BP, PR, RR and patellar reflexes done hourly
- The urine output should be monitored with a strict input output chart to ensure the output is more than 100mL per 4 hours. Consider use of an indwelling catheter to monitor output
- Discontinuing the infusion and seek medical review if the RR<16/min, UOP <100mL/ 4 hours or the patellar reflexes are absent
- Antidote for suspected Mg Toxicity
    - Calcium gluconate (1 gram (10 mL of 10% solution) slowly via intravenous route over 10 minutes) should be given if there is clinical concern over respiratory depression

Use of antibiotics

Routine use of antibiotics in **threatened** preterm labour with intact membranes is not recommended.

However all women in **established** preterm labour (regular uterine activity and ≥4cm dilated) should be offered antibiotics to cover Group B Strep (see guideline) GBS In pregnancy Trustdocs Id 845.

The use of antibiotics with PPROM should be according to the guideline on management of PPROM (Trustdocs Id 873).

Management of labour

There is no benefit shown of elective caesarean section compared to vaginal delivery in delivery of a small and preterm baby in cephalic presentation. However, caesarean section maybe associated with a higher incidence of morbidity in the women.

No robust data to guide the mode of delivery in breech presentation. An individualised plan should be made after discussion with the woman.

Once in established labour it may be appropriate to monitor the fetus via intermittent auscultation after discussion with the women about risk and benefits of CTG vs intermitted auscultation. If the woman chooses intermittent auscultation, this should be done using NICE guidelines on intermittent auscultation.

For the best outcome, the baby should be delivered gently. Elective forceps is no longer thought to be required, but an episiotomy should be considered.

If an assisted vaginal delivery is felt necessary it is best to avoid ventouse prior to 36 weeks gestation, to avoid damage to the fragile scalp.

An epidural anaesthetic is preferable to pethidine for pain relief.

Fetal blood sampling is generally felt to be contraindicated before 34 weeks gestation, but no evidence exists to support this and individual cases must be judged on their own merits.

Delayed cord clamping should be considered and aimed for in all preterm births. If however it is not deemed appropriate, if for example there is significant vaginal bleeding or the baby needs immediate resuscitation, consider milking the cord.

Summary of development and consultation process undertaken before registration and dissemination

The authors listed above drafted this guideline on behalf of O & G clinical guidelines committee who has agreed the final content. During its development it was has been circulated for comment to members of the Obstetric & Gynaecology guidelines committee.

Distribution list / dissemination method

Trust intranet

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