Worcestershire Acute Hospitals NHS Trust

Tocolysis use in preterm labour

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

Guideline for the use of tocolysis use in preterm labour. This differs from the guidance surrounding hyperstimulation – guidance for this can be found in the intrapartum fetal monitoring guideline.

This guideline is for use by the following staff groups:

All staff caring for women in preterm labour.

Lead Clinician(s)

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Approved by *Maternity Governance Meeting* on:	20th October 2023
Approved by Medicines Safety Committee on:	N/A
Review Date: This is the most current document and should be used until a revised version is in place	20th October 2026

Key amendments to this guideline

Date	Amendment	Approved by:
November 2019	New Document	Maternity Governance
October 2023	No changes – Renewal	Maternity Governance

Indications for considering tocolysis

There is no clear evidence that tocolytic drugs improve neonatal outcome following preterm labour. The main indication for the use of tocolytic drugs is to delay the delivery in women with preterm labour to:

- Allow time for maximum fetal lung maturity after administration of steroids.
- To facilitate in-utero transfer

Patients Covered

All women presenting in threatened preterm labour

- suspected on positive Fetal Fibronectin (FFN) (any condition where tocolysis is considered and the patient is not a candidate for FFN test needs prior consultation with the consultant obstetrician)
- who have intact membranes/ruptured membranes and cervical dilation ≤4cm
    - Consider tocolysis for women between 24+0 and 25+6 weeks of pregnancy
    - Offer tocolysis for women between 26+0 and 33+6 weeks of pregnancy

Tocolytic agents to Suppress Pre-term Labour

- The drug of choice for tocolysis is nifedipine, as suggested by NICE (Nov 2015)
- If nifedipine is contraindicated, consider atosiban as they appear to have similar benefits (see appendix)
- Do not offer betamimetics for tocolysis.
- Avoid using multiple tocolytics due to the risk of adverse events.
- If labour progresses, **stop tocolysis**

Contraindications to the use of any tocolytic agents:

- Sepsis / Chorioamnionitis
- Placental abruption
- Fetal distress
- Maternal condition which precludes delaying delivery e.g. significant haemorrhage (i.e. not just from cervical dilation)

Specific contraindications to Nifedipine

a) Cardiac disease: aortic stenosis, heart failure
b) Maternal severe hypotension
c) Porphyria

Duration

- Consultant Obstetrician must be informed of patient's condition before commencing tocolysis.
- Tocolysis is only used for maximum of 48 hours.

Dose regimens for tocolysis

Nifedipine

Initial dose of 2 x 10mg immediate release capsules (do not crush) followed by nifedipine retard tablet 10-20mg 8 hourly for up to 72 hours, adjusted according to uterine activity.

A total dose above 60 mg appears to be associated with a three- to four-fold increase in adverse events.

Atosiban - 2nd line

See appendix 1 for Atsobian dose regimen

The Consultant Obstetrician and the Neonatal Team must be informed of patient's condition before commencing toclolytics.

Maternal and fetal observations whilst tocolysis is being used.

- Consider IV access if Nifedipine is given
- Check BP every 15 min for first 2 hours after first dose (should not cause drop in blood pressure in normotensive women)
- Monitor baby with CTG for the first 2 hours
- When the contractions have reduced to less than 3 in 30 minutes, continuous CTG monitoring is no longer necessary. Listen to the fetal heart every hour. Once contractions have ceased completely then listen to the fetal heart every 4 hours. This will allow the mother to rest. Maternal observations should be performed every 4 hours.
- If any change in the clinical condition occurs contact the Registrar or Consultant.

Postnatally: Tocolysis in immediate period before delivery may predispose to PPH. Therefore women who receive tocolysis just before delivery should be recommended active management of third stage of labour and prophylactic oxytocin infusion after delivery.

Appendix 1
Atosiban to be used when Nifedipine is contraindicated

Specific Contra-indications: Allergy to Atosiban and as above

The recommended dosage and administration schedule for Atosiban is a three-step procedure. All three steps must be followed.

Use a controlled infusion device to adjust the rate of flow in drops/min.

* Do not infuse Atosiban with other medications

Step	Regimen	Injection/infusion rate	Atosiban dose
1	0.9 ml intravenous bolus	Over 1 minute	6.75 mg
2	3 hours intravenous loading infusion prepared as below	24 ml/hour	18 mg/hour
3	Subsequent intravenous infusion prepared as below	8 ml/hour	6 mg/hour

The total dose during a full course should not exceed 330.75mg in 48 hours.

Step 1
The initial bolus dose

Withdraw 0.9 ml (6.75 mg) of a 0.9 ml vial of Atosiban 7.5 mg/ml, solution for injection and administer slowly as an intravenous bolus dose over one minute, under adequate medical supervision in an obstetric unit. The Atosiban 7.5 mg/ml, solution for injection should be used immediately. This should be followed immediately by:

Step 2
Preparation of the intravenous loading infusion

Withdraw 10 ml solution from a 100 ml infusion bag of 0.9% sodium chloride and discard. Replace it by 10 ml Atosiban 7.5 mg/ml concentrate for solution for infusion from two 5 ml vials to obtain a concentration of 75 mg Atosiban in 100 ml.

The loading infusion is given by infusing 24 ml/hour (i.e. 18 mg/hour) of the above prepared solution over three hours.

Step 3
After three hours the infusion rate is reduced to 8 ml/hour (6 mg/hour) for up to 45 hours. Prepare new 100 ml bags in the same way as described to allow the infusion to be continued.

Bag must be used in 24 hours once made.

Discontinuation of Atosiban

Atosiban should be discontinued if

a) The patient is having a significant adverse reaction to the drug.
b) Immediate delivery of the fetus is indicated
c) Uterine contractions have stopped for 12 hours
d) There has been a total of 48 hours treatment

NB: If contractions are persistent and there is a suspicion that labour is progressing, sterile vaginal examination should be considered and if the cervix is progressively dilating (>4 cm) and effacing, the atosiban infusion should be discontinued.

Monitoring

During intravenous administration the following monitoring must be carried out:

This is dependent on the specific cause of the premature labour. As a guide where the health of the mother is not causing concern she should be monitored as occurs in normal labour. (See above)

The fetal heart rate should be monitored continuously during the administration of the atosiban in steps 1 and 2 and for 1 hour into step 3 as a precaution. The fetal heart rate should then be recorded hourly and electronically recorded at 4 hourly intervals during step 3.

Mother's BP and pulse should be monitored hourly.

Any deviation from normal must be reported to the consultant in charge to enable a decision to be made about the plan of care.

Recommencing Atosiban

If Atosiban is to be recommenced then the dosage regime needs to commence from the bolus dose again, but still should not be continued for more than 48 hours. There is only limited clinical experience with multiple re-treatments. Up to 3 re-treatments.

Side Effects:
Nausea is common and the incidence is >10%.
Vomiting, headache, dizziness, hot flushes, tachycardia, hypotension, injection site reaction hyperglycaemia, pruritus rash and allergic reaction have also been reported.

Monitoring

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the Policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
	Saving Babies Lives Audits	Quarterly Audits	Quarterly	Preterm Lead	Maternity Governance/LMNS	Quarterly

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
Guidelines Forum
Maternity Governance Meeting – Invitees.

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee
Maternity Quality Governance Meeting