Document Title:	**ADMINISTRATION OF OXYTOCIN (SYNTOCINON®) FOR INDUCTION AND AUGMENTATION OF LABOUR**		
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Issuing Division/Directorate:	Women's & Children's		
Author/Contact: (Asset Administrator)	Anita Dutta, Consultant for Obstetrics and Gynaecology		
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Related Trust Policies (to be read in conjunction with)	06032 Guideline for the use of Mifepristone, Misoprostol and Prostin in a Termination of Pregnancy for Fetal Abnormalities or Intrauterine Death 04265 Guideline for Fetal Heart Rate Monitoring in Pregnancy and Labour 09079 Guideline for the Management of Normal Labour and Prolonged Labour in Low Risk Patient 04264 Guideline for the Management of Emergency Lower Segment Caesarean Section 09112 Guideline for the Management of Epidural Analgesia 09109 Guideline for induction of labour (IOL) with prostaglandin, artificial rupture of the membranes (ARM) and stretch and sweep 09007 Guideline for the Management of Bladder Care in Pregnancy 05110 Guideline for the management of severe eclampsia and pre-eclampsia 06030 Guideline for the management of vaginal birth after caesarean section

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1.0	Julie Bishop		January 2008
2.0	Miss Joshi		December 2009
2.1		Clarification to 5.1, 8.6, 8.7	February 2010
3.0	Sarah Moon		August 2012
3.1	Sarah Moon	Clarification to point 8.7	September 2012
3.2	Sarah Moon	Clarification to point 14.0	November 2012
3.3	Sarah Moon	Clarification to points 5.0, 6.4 and 13.4	September 2013
3.4	Madhulika Joshi	Clarification to points 13.3 and 13.4	April 2014
4.0	Madhulika Joshi		January 2016
5.0	Anita Dutta	Full Review	4th March 2019

INDEX

1.0 Purpose

1.1 The clinical requirement for induction of labour arises from circumstances in which it is believed that the outcome of the pregnancy will be better if it is artificially interrupted rather than being left to follow its natural course.

2.0 Equality and Diversity

2.1 Mid Essex Hospital Services NHS Trust is committed to the provision of a service that is fair, accessible and meets the needs of all individuals.
(Refer to Appendix A)

3.0 Definition

3.1 Induction is the process of commencing labour artificially.

3.2 Stimulation is the process of inducing contractions when rupture of membranes (ROM) has occurred pre-labour.

3.3 Augmentation is the correction of an inefficient uterine action once labour has started.

4.0 Relative Contra-Indications to Oxytocin (syntocinon®)

4.1 A prior review by an obstetric registrar is necessary for the following:

- Cephalopelvic disproportion;
- Malpresentation;
- Previous caesarean section;
- Multiparity;
- Hypertonic uterine contractions;
- Fetal distress;
- Cardiac disease in the patient;
- Oxytocin (syntocinon®) should not be administered within 6 hours following the administration of prostin.

5.0 Prior to Commencement of Oxytocin (syntocinon®)

5.1 The midwife should give a history to the obstetric registrar/consultant on call.

5.2 The obstetric registrar on call must review and /or discuss the case with the obstetric consultant in order to formulate a plan of care.

5.3 Oxytocin (syntocinon®) must always be prescribed prior to the commencement of the infusion.

5.4 In addition, the patient's parenteral fluid chart should be completed in full including; oxytocin (syntocinon®) written in capitals, legible date, dose, route and signature required

by the obstetric registrar/ consultant. The parenteral fluid chart should be secured in the woman's handheld records.

5.5 At prescription of oxytocin (syntocinon®) a plan of care should be documented that should reflect whether the prescribing obstetric registrar/ consultant wishes for a vaginal examination to be undertaken 4 hours after the start of regular contractions i.e. 3:10, lasting 60 seconds.

5.6 The oxytocin (syntocinon®) infusion should be calibrated according to the protocol and should not be decreased unless a bradycardic episode occurs, or there is a pathological CTG recorded.

5.7 A strict fluid balance chart should be commenced and accurately maintained.

5.8 Following the decision for oxytocin (syntocinon®) continuous cardiotocograph (CTG) should be commenced. If this has to stop to allow the woman to go to the bathroom, the fetal heart rate should be listened into intermittently with a sonicaid.

5.9 The reason for suspending the CTG monitoring should be documented in the Labour Care Record.

5.10 The midwife should ensure analgesia is effective, and offer the patient an epidural before oxytocin is started.

5.11 A clear plan of care should be documented in the patient's health care records, to include:

- The time period in which oxytocin (syntocinon®) should be infused before the next vaginal assessment;
- Continual fetal monitoring;
- A discussion regarding adequate analgesia.

6.0 Oxytocin Infusion for Induction of Labour (IOL)

(Refer to section 5 for specific management prior to commencement of oxytocin (syntocinon®).

6.1 Following the ARM (see 8.1) a 20 minute CTG is performed (to exclude risk of cord prolapse and hypertonic contractions).

6.2 If satisfactory an oxytocin (syntocinon®) infusion may be commenced. However, this can be left for 2- 4 hours to see if the ARM suffices; but this is not usually enough in a primigravida induction.

6.3 Oxytocin (syntocinon®) should not be started for 6 hours following the administration of vaginal prostaglandins as it may cause hyperstimulation.

6.4 A partogram should be commenced if oxytocin (syntocinon®) infusion is being used for induction of labour.

7.0 Stimulation with Pre-labour Rupture of Membranes for IOL

7.1 Patients with pre-labour rupture of membranes at term can be offered a choice of immediate IOL or expectant management, but this should not exceed 24 hours.

7.2 If a vaginal examination (VE) is performed after spontaneous rupture of membranes (SROM), IOL must be commenced **within 6 hours,** as the VE increases the risk of infection.

7.3 If the cervix is unfavourable consider **one** intravaginal prostaglandin 3mg pessary. In addition, a second pessary of prostaglandin should be considered **only** after review from an **obstetric consultant**. Oxytocin (syntocinon®) should be commenced 6 hours after the intravaginal prostaglandin if the patient is not in labour to minimize risk of infection.

7.4 Conduct a VE with prior consent from the patient and document the findings in the health care records before commencing oxytocin (syntocinon®), even if the uterus is not contracting, to establish the state of the cervix at the time of starting.

7.5 If pre-labour rupture of membranes occurs with a previous caesarean section must discuss method with obstetric registrar/consultant. Prolonged use of oxytocin (syntocinon®) (>10hours in trial of scar) is contraindicated.

7.6 Sometimes the forewaters are later found to be intact. If forewaters are intact proceed to an ARM. Oxytocin (syntocinon®) dose may need to be reduced following ARM to prevent hyperstimulation.

8.0 Augmentation for Confirmed Delay in First Stage of Labour

8.1 Following confirmation of:

- Spontaneous rupture of membranes (SROM);
- Artificial rupture of membranes (ARM) when an examination should be performed after 2 hours;
- Where vaginal examination has defined cervical dilatation which is less than 2cm in 4hours.

8.2 Normal progress in the active phase of labour is cited 0.5 –1cm/hour. Deviation from this defined normal rate of dilatation should be an indication for evaluation rather than for intervention.
(Guideline for the Management of Normal Labour and Prolonged Labour in Low Risk Patient; register number 09079)

8.3 Evaluate the reason for slow progress and where obstruction is excluded, consider augmentation.

8.4 In low risk primigravid patients the midwife should consult the obstetric registrar/consultant on call with regards to commencing an oxytocin (syntocinon®) infusion.

8.5 In low risk multigravid patients the obstetric registrar/consultant should review, make a full assessment prior to making a decision to commence oxytocin (syntocinon®) to include:

- Abdominal palpation;
- Vaginal examination (where not already undertaken by the midwife prior to referral for medical plan).

8.6 Continuous electronic fetal monitoring (EFM) should be used when oxytocin (syntocinon®) is administered.
(Refer to point 13.0)

8.7 All women receiving a syntocinon infusion to induce labour to have a partogram commenced at time of commencement of the syntocinon infusion.

8.8 A clear plan of care should be documented in the patient's Labour Care and Baby Delivery Records to include:

- The time period in which oxytocin (syntocinon®) should be infused before the next vaginal assessment;
- Continuous electronic fetal monitoring via CTG monitor;
- A discussion regarding adequate analgesia.

9.0 Augmentation for Confirmed Delay in Second Stage of Labour

9.1 In low risk primigravid patients if contractions are inadequate at the **onset of the second stage** consideration should be given to the use of oxytocin (syntocinon®), following review by the obstetric registrar/consultant on call.

9.2 Patients with confirmed **delay in the second stage** should be assessed by the obstetric registrar or consultant on-call. Oxytocin (syntocinon®) should only be commenced in the second stage following a vaginal examination to exclude brow presentation.

9.3 Continuous electronic fetal monitoring (EFM) should be used when oxytocin (syntocinon®) is administered.
(Refer to point 13.0)

9.4 The oxytocin (syntocinon®) infusion should always be calibrated according to the protocol.
(Refer to Appendix 2 & 3)

10.0 Induction with Previous Caesarean Section

(Refer to the 'Guideline for the management of vaginal birth after caesarean section'. Register number 06030).

11.0 Regimen for Oxytocin Infusion via a Volumetric Pump

11.1 The regime for an oxytocin (syntocinon®) infusion combines oxytocin 10 units added to 500mls of normal saline 0.9% (or Hartmann's solution). The starting dose is 0.3ml/hour or 1mU(milliunit)/minute.
(Refer to Appendix 2)

11.2 Increase the tabulated dose at 30 minute intervals, the minimum dose possible of oxytocin (syntocinon®) should be used and this should be titrated against uterine contractions aiming for a maximum of 3-4 (NICE 2014 state 4-5:10) contractions every 10 minutes, each contraction lasting no more than 60 seconds.

11.3 Adequate contractions may be established at 12mU/minute.

11.4 The maximum dose stated by the summary of product characteristics is 20mU/minute.

11.5 If higher doses are used the maximum dose should not exceed 32mU/minute.

12.0 Regimen for Oxytocin (syntocinon®) Infusion via a Syringe Driver

(Refer to Appendix 3)

12.1 In the absence of a volumetric pump the following regime for an oxytocin (syntocinon®) infusion via a syringe driver can be administered.

12.2 Oxytocin (syntocinon®) can be added to normal saline 0.9% or Hartmanns. As only small quantities are required use ampoules of normal saline 0.9%.

12.3 The oxytocin (syntocinon®) infusion should be administered through a syringe driver.

12.4 To make up the syringe driver, the dilution of oxytocin (syntocinon®) in normal saline 0.9%.is 10 units of oxytocin (syntocinon®) in 49 mls of normal saline 0.9%. Hence 0.6mls/hour = 2 milliunit (mU) oxytocin (syntocinon®) per minute.

12.5 Rate: commence the infusion at 2mU/minute and increase at intervals of 30 minutes following regimen.

12.6 The minimum dose possible of oxytocin (syntocinon®) should be used and this should be titrated against uterine contractions aiming for a maximum of 3-4 (NICE 2014 state 4-5:10) in 10 minutes.

12.7 The licensed maximum dose is 20 mU / minute.

12.8 If higher doses are required discuss with the obstetric registrar/consultant on call. The maximum dose should not exceed 32 mU / minute without careful consultant review.

12.9 Start at 2 milliunits per minute but if the frequency of the contractions go > 3 to 4 (NICE 2014 state 4-5:10) in 10 minutes then reduce to 1 mU / minute = 0.3 mls / hour.

12.10 Higher doses may be needed if the patient is less than 24 weeks gestation.

13.0 Monitoring during an Oxytocin (syntocinon®) Infusion

(Refer to the 'Guideline for fetal heart rate monitoring in pregnancy and labour'. Register number 04265)

13.1 Continuous cardiotocograph (CTG) monitoring should be in progress where oxytocin is being administered.
(Refer to point 8.8)

13.2 Uterine contractions should be recorded on the partogram and in the patient's Labour Care Records.

13.3 Oxytocin (syntocinon®) should be reduced if contractions occur more frequently than 5 to 6 contractions in 10 minutes.

13.4 If the FHR (fetal heart rate) trace is classified as suspicious, this should be reviewed by the obstetric registrar/ consultant on call and the oxytocin (syntocinon®) should remain in progress, unless a prolonged bradycardic episode occurs, or there is a pathological CTG recorded.

13.5 Maternal condition: document all observations i.e. blood pressure, temperature, pulse and respirations on partogram and in the patient's Labour Care Records.
(Refer to the 'Guideline for fetal heart rate monitoring in pregnancy and labour'. Register number 04265; 'Guideline for the management of normal labour and prolonged labour in low risk patients'. Register number 09079)

13.6 If cervical dilatation has increased by less than 2cm after 4 hours of oxytocin, further obstetric review is required to assess the need for caesarean section.

13.7 If cervical dilatation has increased by 2cm or more, advise 4 hourly vaginal examinations.

13.8 Vaginal examinations should be performed as detailed in the plan of care.

13.9 Review the effectiveness of analgesia and advise as indicated.

14.0 Indications for Discontinuing Oxytocin (Syntocinon®)

14.1 The delivery midwife should stop the oxytocin (Syntocinon®) infusion and request a review from the obstetric registrar/consultant on call for the following indications:

- Fetal bradycardia;
- Pathological CTG;
- Uterine hypertony;
- Uterine rupture/ vaginal bleeding;
- Breathlessness.

14.2 When the midwife has stopped the oxytocin (Syntocinon®) infusion, this procedure should be documented in the woman's Labour Care Record.

15.0 Fluid Balance

15.1 It is not normally necessary to give any other fluids intravenous unless medically indicated or an epidural is required.

15.2 Due to the increased risk of antidiruretic activity strict monitoring of fluid intake is required in the following groups of patients who require oxytocin (syntocinon®)

- Patients with severe pregnancy induced hypertension (PIH) / pre-eclampsia; (Refer to the 'Guideline for the management of severe eclampsia and pre-eclampsia' Register number 05110)
- Patients with twins;
- Patients with cardiac disease;
- Patients with prolonged use of syntocinon®.

15.3 These patients should follow the regime for 30 units of oxytocin (syntocinon®) in 500mls normal saline 0.9% in order that a reduced amount of fluid is infused.
(Refer to Appendix 2)

15.4 Monitoring of fluid intake and output should be recorded on the fluid balance chart and documented in the patient's health care records.
(Refer to 'Bladder care in Maternity Services'; register number 09007)

15.5 Nausea/vomiting: administer stemetil 12.5mg intramuscularly 8 hourly if persistent.

15.6 Oxytocin (syntocinon®) should be administered through a suitable infusion device.

16.0 Care following Delivery

16.1 Following the delivery, the oxytocin (syntocinon®) infusion may be discontinued.

16.2 To reduce the risk of a postpartum haemorrhage (PPH), active management of the 3rd stage should always be practised when oxytocin (syntocinon®) has been used.

16.3 If an oxytocin (syntocinon®) infusion was only used in the 2nd stage, it can be discontinued after the delivery.

16.4 If an oxytocin (syntocinon®) infusion was used in 1st stage, run the infusion at 20mls/hr for 1 hour and at 10mls/hour for 2 hours, then discontinue.

17.0 Staffing and Training

17.1 All midwifery and obstetric staff must attend yearly mandatory training which includes skills and drills training.

17.2 All midwifery and obstetric staff are to ensure that their knowledge and skills are up-to-date in order to complete their portfolio for appraisal.

18.0 Professional Midwifery Advocates

18.1 Professional Midwifery Advocates provide a mechanism of support and guidance to women and midwives. Professional Midwifery Advocates are experienced practising midwives who have undertaken further education in order to supervise midwifery services and to advise and support midwives and women in their care choices.

19.0 Infection Prevention

19.1 All staff should follow Trust guidelines on infection prevention by ensuring that they effectively 'decontaminate their hands' before and after each procedure.

19.2 All staff should ensure that they follow Trust guidelines on infection control, using Aseptic Non-Touch Technique (ANTT) when carrying out procedures i.e. vaginal examinations and conducting deliveries.

20.0 Audit and Monitoring

20.1 Audit of compliance with this guideline will be considered on an annual audit basis in accordance with the Clinical Audit Strategy and Policy and the Maternity annual audit work plan. The Women's and Children's Clinical Audit Group will identify a lead for the audit.

20.2 As a minimum the following specific requirements will be monitored:

- Assessment prior to commencement of oxytocin (syntocinon®);
- Dose schedules including frequency of increment;
- Monitoring arrangements for both the woman and the fetus;
- Requirement to document an individual management plan in the health record when oxytocin commences;
- When oxytocin (syntocinon®) should be stopped;
- Documentation of all of the above.

20.3 A review of a suitable sample of health records of patients to include the minimum requirements as highlighted in point 20.2 will be audited. A minimum compliance 75% is required for each requirement. Where concerns are identified more frequent audit will be undertaken.

20.4 The findings of the audit will be reported to and approved by the Women's and Children's Clinical Audit Group and an action plan with named leads and timescales will be developed to address any identified deficiencies. Performance against the action plan will be monitored by this group at subsequent meetings.

20.5 The Women's and Children's Clinical audit report will be reported to the monthly Women's and Children's Directorate Governance Meeting and significant concerns relating to compliance will be entered on the local Risk Assurance Framework.

20.6 Key findings and learning points from the audit will be submitted to the Patient Safety Group within the integrated learning report.

20.7 Key findings and learning points will be disseminated to relevant staff.

21.0 Guideline Management

21.1 As an integral part of the knowledge, skills framework, staff are appraised annually to ensure competency in computer skills and the ability to access the current approved guidelines via the Trust's intranet site.

21.2 Quarterly memos are sent to line managers to disseminate to their staff the most currently approved guidelines available via the intranet and clinical guideline folders, located in each designated clinical area.

21.3 Guideline monitors have been nominated to each clinical area to ensure a system whereby obsolete guidelines are archived and newly approved guidelines are now downloaded from the intranet and filed appropriately in the guideline folders. 'Spot checks' are performed on all clinical guidelines quarterly.

21.4 Quarterly Clinical Practices group meetings are held to discuss 'guidelines'. During this meeting the practice development midwife can highlight any areas for future training needs will be met using methods such as 'workshops' or to be included in future 'skills and drills' mandatory training sessions.

22.0 Communication

22.1 A quarterly 'maternity newsletter' is issued to all staff to highlight key changes in clinical practice to include a list of newly approved guidelines for staff to acknowledge and familiarise themselves with and practice accordingly. Midwives that are on maternity leave or 'bank' staff have letters sent to their home address to update them on current clinical changes.

22.2 Approved guidelines are published monthly in the Trust's Staff Focus that is sent via email to all staff.

22.3 Approved guidelines will be disseminated to appropriate staff quarterly via email.

22.4 Regular memos are posted on the guideline and audit notice boards in each clinical area to notify staff of the latest revised guidelines and how to access guidelines via the intranet or clinical guideline folders.

23.0 References

National Institute for Clinical Excellence (2014) Intrapartum Care: care of healthy women and their babies during childbirth. London: NICE.
www.nice.org.uk/guidance/cg190clinicalguidelines (CG190)

Appendix 1: Preliminary Equality Analysis

This assessment relates to: (please tick all that apply)

A change in a service to patients		A change to an existing policy	**X**	A change to the way staff work	
A new policy		Something else (please give details)			

Questions	Answers
1. What are you proposing to change?	Full Review
2. Why are you making this change? (What will the change achieve?)	3 year review
3. Who benefits from this change and how?	Patients and clinicians
4. **Is anyone likely to suffer any negative impact as a result of this change?** If **no**, please record reasons here and sign and date this assessment. If **yes**, please complete a full EIA.	No
5. a) Will you be undertaking any consultation as part of this change? **b) If so, with whom?**	Refer to pages 1 and 2

Preliminary analysis completed by:

Name	Anita Dutta	**Job Title**	Consultant Obstetrician	**Date**	January 2019

Appendix 2

Regimen for Oxytocin (syntocinon®) Infusion via a Volumetric Pump

Standardized Dilutions and Dose Regimes

Time after starting (mins)	Oxytocin Dose (mU/min)	Volume infused (mU/hour)	
		Dilution 10 units oxytocin in 500mls normal saline 0.9%or hartmanns	Dilution 30 units oxytocin in 500mls normal saline 0.9%or hartmanns **(Refer to point 13.0)**
0	1	3	1
30	2	6	2
60	4	12	4
90	8	24	8
120	12	36	12
150	16	48	16
180	20	60	20
210	24	72	24
240	28	84	28
270	32	96	32
Shaded doses only to be administered following review by an obstetric registrar or consultant on call			

Appendix 3

Regimen for Oxytocin (syntocinon®) Infusion via a Syringe Driver

Time after starting (mins)	**Oxytocin Dose (mU/min)**	**Volume infused (mls/hour)** Dilution 10 units in 49mls normal saline or hartmanns
0	2	0.6
30	4	1.2
60	8	2.4
90	12	3.6
120	16	4.8
150	20	6.0
180	24	7.2
210	28	8.4
240	32	9.6