Appendix 2 - Oxytocin (Syntocinon)-Induction of labour, Augmentation of Labour and Post-Partum Administration

This appendix has been based on the Victorian Standard for Induction of Labour (IOL) - "Oxytocin (Syntocinon) Induction and Augmentation of Labour: Clinical Practice Guideline," prepared by the Maternity Newborn Clinical Network, which has the objective of providing Maternity Services in Victoria with an agreed Standard of Care based on the best currently available evidence.

Expected Outcomes

Labour is induced or augmented using an intravenous oxytocin (Syntocinon) infusion to expedite birth where clinically indicated.
Oxytocin infusion is initiated postpartum when clinically indicated as a risk mitigation strategy for women at risk of postpartum haemorrhage.

Oxytocin - Oxytocin is a hormone produced by the posterior pituitary gland, which plays a role in childbirth and lactation by stimulating the smooth muscle of the uterus, producing rhythmic contractions. Oxytocin has a pressor and anti-diuretic effect.

Syntocinon: Synthetically produced form of oxytocin that can be administered intravenously or intramuscularly. Synthetic oxytocin only has a slight pressor and anti-diuretic effect.

Postpartum haemorrhage (PPH): Vaginal blood loss of greater than 500ml following a vaginal birth or greater than 1000ml following caesarean section.

Uterine hyperstimulation (tachysystole) may occur with or without FHR changes and is defined as:
5 or more contractions in 10 minutes over a 30 min period, or:
Contractions lasting more than 2 minutes in duration, or:
Contractions of normal duration occurring within 60 seconds of each other.

Indications

Intrapartum
For induction or augmentation of labour, where clinically indicated. This must be at the instigation of the lead obstetrician.

Postpartum - Postpartum use of Syntocinon infusion is indicated by:
Syntocinon Infusion during labour
PPH (Post-Partum Haemorrhage) High risk of PPH e.g. long labour, grand multiparty, multiple birth, previous history
Poorly contracted uterus following birth
Following caesarean section (see issues to consider).

Issues to Consider

If the cervix is unfavourable (Bishop Score <6) induction with vaginal prostaglandins should be considered (refer Appendix 3 - Induction of Labour with PGE2 vaginal gel).
For women with intact membranes an artificial rupture of membranes (ARM) should be performed prior to commencing induction with oxytocin. (refer to Appendix 1)
Oxytocin to induce labour in women with a history of previous caesarean is not recommended at Ballarat Health Services and should be discussed with the lead obstetrician prior to use.
Oxytocin should not be used within 6 hours of administration PGE2 vaginal gel (refer to Appendix

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Induction of Labour with PGE2 vaginal gel).
Oxytocin to augment labour in a multigravida should be discussed with the lead obstetrician prior to use.
Physiological management of the third stage of labour is contraindicated in women receiving oxytocin during labour.
Fetal well-being should be established prior to commencement of oxytocin to ensure there are no fetal heart rate abnormalities. A 20-30 min CTG should be performed prior to commencing induction.
Women with a high parity (>4) should not have oxytocin commenced without discussion with the lead obstetrician.

Possible Adverse Effects
Cardiovascular: hypotension, tachycardia, cardiac arrhythmia, ECG changes following IV administration of concentrated solutions, rarely hypertension, anaphylactic reaction.
Water Intoxication: can result from high doses or prolonged periods of infusion of oxytocin in electrolyte-free fluids.
Neonatal: bradycardia/fetal distress, hyponatraemia, jaundice, convulsions, retinal haemorrhage, skin rashes, cardiac arrhythmias, and anaphylactic reactions have been reported occasionally.
Over dosage: may lead to hypertonic contractions, fetal distress, fetal hypoxia, cervical and vaginal laceration, PPH, placenta abruption, amniotic embolism, water intoxication, uterine rupture (more likely to occur in women who have had more than one oxytocic agent/previous uterine surgery/multiparty).
Other: nausea, vomiting, PPH, pelvic haematoma

Drug Interactions: Prostaglandins may potentiate the effect of oxytocin, careful monitoring is recommended with concomitant administration. Some Inhalation Anaesthetics may enhance the hypotensive effect of oxytocin and reduce its oxytocic effect. When given during or after caudal block anaesthesia, oxytocin may potentiate the pressor effect of sympathomimetic vasoconstrictor agents.

Precautions
The medical officer must write up the order for the Syntocinon infusion on an intravenous orders chart specifying the type of IV fluid and the dose of Syntocinon. The rate can be documented as 'APP' (as per protocol). There may be times when the dosage and rate parameters will be specified by the lead Obstetrician. When this occurs the rate parameters must also be documented on the IV order form.
The Oxytocin (Syntocinon) infusion MUST be delivered via an Alaris pump. Monitoring must be attended as detailed in the detailed Steps, Procedures and Actions. Continuous Cardiotocography (CTG) monitoring must be in progress when the oxytocin infusion is running. It may be removed if the woman needs to go to the toilet, or the lead obstetrician has given permission and documented for intervals without the CTG insitu. Once labour is established in a multigravida, consider slowly reducing the infusion rate, at 30 minute or greater intervals, being careful to maintain 4 contractions in 10 minutes. Additional IV cannula is unnecessary unless it is indicated for an epidural, additional hydration or another infusion (e.g. MgSO4). The oxytocin infusion should not normally be stopped during procedures' (e.g. insertion of an epidural).

The lead obstetrician must be notified if any of the following occurs:
- Uterine hyperstimulation (Refer to CPG/U005 Uterine Hyperstimulation (tachysystole) - management of).

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• Abnormal CTG / fetal distress.
• Signs of obstructed labour.
• Any other maternal or fetal complications.

If at any time there is a concern for maternal or fetal wellbeing and the lead obstetrician is unable to be contacted / have not responded to their page, the midwifery staff may cease the infusion.

Intrapartum infusion rates

<table>
<thead>
<tr>
<th>mls/hr</th>
<th>millilitres/min</th>
<th>Time</th>
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<tr>
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<td>32</td>
<td>270 minutes</td>
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INTRAPARTUM ADMINISTRATION OF SYNTOCINON INFUSION

Document all findings in the progress notes/partogram

Maternal Assessment
Maternal blood pressure, Pulse rate, Uterine activity over a 10 minute period (palpated), Vaginal loss.
Abdominal palpation to confirm fetal lie and presentation - document findings.
Perform a CTG (min 20 mins).
Vaginal examination and Bishops Score.
Obtain IV access
Explain the anticipated outcome, benefits and risks of IOL with oxytocin to the woman and obtain verbal consent

Perform Artificial Rupture of Membranes (ARM) Document the results of the vaginal examination, the instrument used for the ROM and the colour and quantity of the liquor.
Discuss the options for pain management and that an epidural may be commenced prior to or during the IOL.

Gather equipment and prepare infusion

The medical officer must write the order for the oxytocin infusion on the Intravenous Orders chart (MR 645)

The infusion must be checked by two midwives

The Syntocinon infusion line should be attached to the arm of the Y extension set (Heidelberg) without the valve.

Continuous CTG monitoring must be in situ for the duration of IOL with an Oxytocin infusion.

Monitor and document:
Uterine activity - strength, frequency and duration for a 10 minute period every 30 minutes.
Fetal wellbeing including fetal heart rate and continuous CTG monitoring.
Maternal vital signs - pulse and blood pressure every half hour. Use finger probe to monitor maternal pulse where available.
Temperature every 2-4 hours.
Record the units of oxytocin in the flask and the rate of the infusion in mls/hr at the beginning of each set of observations.
A strict fluid balance chart.
Other labour observations - abdominal palpation, vaginal loss, liquor colour and quantity and vaginal examinations as routine for labour
Abdominal palpation of contractions every half hour

Cease the infusion if:
Uterine hyperstimulation occurs (Refer to CPP0459 Uterine Hyperstimulation (Tachysystole) - management of).
Abnormal CTG / fetal distress.
Category 1 Caesarean Section called.
Signs of obstructed labour.
Any other maternal or fetal complication occurs.

The case must be discussed with the lead obstetrician if the infusion is to be recommenced.
Following birth, a further Syntocinon infusion will be commenced

POSTPARTUM

The woman must be assessed prior to birth if possible and the need for a postpartum oxytocin infusion established.

Indications:

- Syntocinon Infusion during labour.
- PPH (Post-Partum Haemorrhage).
- High risk of PPH (e.g. prolonged labour, grand multiparty, and multiple birth).
- Poorly contracted uterus following birth.
- Following caesarean section.

Order is written up on the Intravenous Orders chart (MR 645) - 40 units Syntocinon in 1 litre of Normal Saline or Hartmann’s run at 250mL/hr.

The infusion bag may be prepared when birth is imminent but must be stored outside the room until it is to be commenced postpartum. The Infusion and additive must be checked by two midwives.

Postoperative Caesarean Section Management

Following Caesarean section an infusion of 20 units Oxytocin in 500mls over 4 hours is routinely commenced in theatre as a preventative measure for postpartum haemorrhage.

Monitor and document:

- Vital signs 15 minutely for 2 hrs following birth and increase the frequency if PPH, poorly contracted uterus or maternal compromise.
- 30 minutely for 2 hrs (RPAO) following caesarean section, hourly for 2 hours and then four hourly and document on postnatal frequent observations chart.
- Assess lochia (colour and amount), fundus, urine output and pain every 15 minutes for 2 hours or as per postoperative care.
- The woman should stay in the labour ward for the 2hrs of observation (excluding caesarean women); if it is necessary to transfer the woman then these observations must continue in the postnatal ward.

If not already insitu, woman may require a catheter to help keep bladder empty.

When the infusion is completed assess the need for further treatment and if not required Remove the flask and IV line.