

# South Australian Paediatric Clinical Guidelines

## Oxytocin: augmentation and induction of labour infusion

© Department of Health, Government of South Australia. All rights reserved.

### Introduction

- > Oxytocin is a hormone released from the posterior pituitary. As it stimulates rhythmic contractions of uterine smooth muscle, it can be used to induce or augment labour (MIMS Syntocinon® full prescribing information 2009) and to prevent or treat postpartum haemorrhage

### Oxytocin

- > Oxytocin (Syntocinon®) is a synthetic nonapeptide identical with oxytocin.
- > In the doses used it has only a very slight pressor and anti-diuretic activity (MIMS Syntocinon® full prescribing information 2009)
- > Intrapartum oxytocin infusion regimens may be administered in the following:
  - > Induction of labour
  - > Augmentation of labour
- > There is no hard evidence to recommend a particular dosage of oxytocin for induction or augmentation of labour infusion regimens. Oxytocin infusion regimens in this guideline are based on medical expert consensus

### Contraindications

- > Hypersensitivity to oxytocin (Syntocinon®)

### Precautions

- > In women who have **diabetes mellitus** or **abnormal glucose tolerance in pregnancy**, oxytocin should be administered with 0.9 % sodium chloride to prevent hyponatraemia
- > In women with **cardiovascular disorders** the infusion volume should be kept low by using a more concentrated oxytocin solution (for more information on prophylaxis management of the third stage of labour in volume critical patients, see PPG, Cardiac disease in pregnancy, Postpartum)
- > **Avoid** large volumes of oral and IV fluids with oxytocin administration

# South Australian Paediatric Clinical Guidelines

## Oxytocin: augmentation and induction of labour infusion

© Department of Health, Government of South Australia. All rights reserved.

### Water intoxication (Hyponatraemia)

- > High doses of oxytocin or prolonged periods of infusion of oxytocin in electrolyte-free fluids may interfere with vasopressin receptors. This can result in **water intoxication**

### Symptoms and signs of water intoxication:

- > Headache, nausea, vomiting and abdominal pain, lethargy, drowsiness, unconsciousness, grand mal type seizures, low blood electrolyte concentration

### Treatment

- > Discontinue oxytocin infusion
- > Restrict fluid intake
- > Promote diuresis
- > Correct electrolyte imbalance
- > Control convulsions
- > If coma is present: maintain a free airway, and carry out the routine measures for care of an unconscious patient

### Induction of labour (IOL) regimen (oxytocin)

RCOG (2001) recommends the following oxytocin regimen guidelines:

- > Allow a delay of six hours after administration of the last dose of vaginal prostaglandins before commencing oxytocin
- > In women with intact membranes, amniotomy should be performed where feasible before starting a oxytocin infusion
- > Use the minimum dose possible and aim for a maximum of 3 – 4 contractions in ten minutes
- > Prescribe and record the dose of oxytocin being delivered (i.e. mU / minute)
- > Continuous CTG whenever oxytocin is used for induction or augmentation
- > Follow link to Induction of labour techniques for further information
- > The **oxytocin high dose regimen for IUFD is covered in chapter 102b**

- > The following regimen is consistent with RCOG and oxytocin (Syntocinon®) product guidelines. However, individual organisations may differ in their management

ISBN number:  
Endorsed by:

Contact:

UNKNOWN

South Australian Paediatric Clinical Guidelines Reference Committee. South Australian Child Health Clinical Network  
South Australian Paediatric Clinical Guidelines Reference Committee:  
cywhs.paediatricclinicalguidelines@health.sa.gov.au

South Australian Paediatric Clinical Guidelines

# Oxytocin: augmentation and induction of labour infusion

© Department of Health, Government of South Australia. All rights reserved.

## Oxytocin induction / augmentation of labour dosage regimen

### Preparation

- > Add 10 IU oxytocin to one litre of Hartmann's solution or sodium chloride 0.9 %
- > Use an appropriate volumetric infusion pump
- > Infuse as a separate line piggybacked into the mainline

### Initial rate:

- > 12 mL / hour (2 mU / min)

### Increments:

- > Increase every 30 minutes by 12 mL / hour (2 mU / min)

### Maximum:

- > 192 mL / hour (32 mU / min)

### Prolonged oxytocin infusion

- > if a second litre of oxytocin infusion is required, consider doubling the dose per litre and running the infusion at half the rate (e.g. increase oxytocin dose to 20 units per litre and infuse dose at half the previous rate)

### Maximum oxytocin infusion dosage

- > The summary of product guidelines recommends a maximum dose of IV oxytocin 20 mU / minute
- > In cases where labour progress is unresponsive, RCOG recommends higher doses, which should not exceed 32 mU / minute



Last reviewed: 14/01/13

# South Australian Paediatric Clinical Guidelines

## Oxytocin: augmentation and induction of labour infusion

© Department of Health, Government of South Australia. All rights reserved.

### High concentration / low volume oxytocin IOL dosage regimen

- > This is a modification of the above oxytocin induction of labour regimen, allowing the same dose of oxytocin to be administered in 1 / 10th the volume of 0.9 % sodium chloride
- > Suitable for women with a **cardiovascular disorder**, who are sensitive to fluid overload

#### Preparation

- > Add 10 I.U oxytocin to a 100 mL bag of 0.9 % sodium chloride
- > Use an appropriate syringe pump
- > Infuse as a separate line piggybacked into the mainline at the IV insertion point

#### Initial rate:

- > Commence oxytocin at 0.6 - 1.2 mL / hour (1-2 mU / min)

#### Increments

- > Increase every 30 minutes by 1.2 mL / hour (2 mU / min)

#### Maximum

- > 19.2 mL / hour (32 mU / min)

### Maximum oxytocin infusion dosage

- > The summary of product guidelines recommends a maximum dose of IV oxytocin 20 mU / minute
- > In cases where labour progress is unresponsive, RCOG recommends higher doses, which should not exceed 32 mU / minute



Last reviewed: 14/01/13

# South Australian Paediatric Clinical Guidelines

## Oxytocin: augmentation and induction of labour infusion

© Department of Health, Government of South Australia. All rights reserved.

### Observations

#### Induction of labour

- > Routine labour observations (partograph)

#### Uterine hypercontractility without signs of fetal compromise:

- > Reduce oxytocin infusion rate and seek review

#### Uterine hypercontractility with associated signs of fetal compromise:

- > Prolonged use of maternal facial oxygen therapy may be harmful to the baby and should be avoided. There is no research evidence evaluating the benefits or risks associated with the short-term use of maternal facial oxygen therapy in cases of suspected fetal compromise (NICE 2007)
- > Decrease or discontinue oxytocin
- > Position woman on her left side
- > Increase intravenous fluids
- > Review by medical officer
- > Oxygen at 8 litres for duration of fetal compromise
- > Palpate the uterus to determine uterine response to management
- > Consider need for uterine tocolytic e.g. salbutamol (for further information, refer to PPG, tocolysis for uterine hypercontractility)

### References

1. MIMS Syntocinon®. Full prescribing information. July 2009.
2. Grotegut CA, Paglia MJ, Johnson LNC, Thames B, James AH. Oxytocin exposure during labor among women with postpartum hemorrhage secondary to uterine atony. *Am J Obstet Gynecol* 2011; 204: 56. e1-6.
3. Novartis Pharmaceuticals Australia. Syntocinon® (synthetic oxytocin). Product information Australia 1994.
4. Royal College of Obstetricians and Gynaecologists (RCOG). Induction of labour, Evidence-based Clinical Guideline Number 9. RCOG Clinical Effectiveness Support Unit, London: RCOG Press; 2001.
5. National Institute of Clinical Excellence (NICE). Intrapartum care: care of healthy women and their babies during childbirth. NICE Clinical guideline 55, London: RCOG Press; 2007. Available from URL: <http://www.nice.org.uk/nicemedia/live/11837/36280/36280.pdf>
6. Fawole B, Hofmeyr GJ. Maternal oxygen administration for fetal distress. *Cochrane Database of Systematic Reviews* 2003, Issue 4. Art. No.: CD000136. DOI: 10.1002/14651858.CD000136. Available from URL: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD000136/pdf/standard>
7. MIMS Duratocin®. Full prescribing information. March 2008.

ISBN number:  
Endorsed by:

Contact:

UNKNOWN

South Australian Paediatric Clinical Guidelines Reference Committee. South Australian Child Health Clinical Network  
South Australian Paediatric Clinical Guidelines Reference Committee:  
[cwys.paediatricclinicalguidelines@health.sa.gov.au](mailto:cwys.paediatricclinicalguidelines@health.sa.gov.au)

# South Australian Paediatric Clinical Guidelines

## Oxytocin: augmentation and induction of labour infusion

© Department of Health, Government of South Australia. All rights reserved.

### Abbreviations

CTG	Cardiotocograph
e.g.	For example
et al.	And others
IOL	Induction of labour
IU	International units
IV	Intravenous
mg	Milligram(s)
mL	Millilitre(s)
mU	Millunit(s)
%	Percent
RANZCOG	Royal Australian and New Zealand College of Obstetricians and Gynaecologists
RCOG	Royal College of Obstetricians and Gynaecologists
®	Registered trademark

### Version control and change history

**PDS reference:** OCE use only

Version	Date from	Date to	Amendment
1.0	29 June 04	21 April 09	Original version
2.0	21 April 09	17 July 12	Reviewed
3.0	17 July 12	14 Jan 13	Reviewed
4.0	14 Jan 13	current	

**ISBN number:**  
**Endorsed by:**

**Contact:**

UNKNOWN

South Australian Paediatric Clinical Guidelines Reference Committee. South Australian Child Health Clinical Network  
South Australian Paediatric Clinical Guidelines Reference Committee:  
cywhs.paediatricclinicalguidelines@health.sa.gov.au