South Australian Paediatric Clinical Guidelines

# Oxytocin high dose regimen for intrauterine fetal death



## Introduction

- Oxytocin (Syntocinon®) is synthetic oxytocin, a nonapeptide hormone normally released by the posterior lobe of the pituitary. Being wholly synthetic, it does not contain vasopressin and has a constant and reliable effect (Novartis 1994)
- Oxytocin stimulates the smooth muscle of the uterus, producing rhythmic contractions. It also causes contraction of the myo-epithelial cells surrounding the mammary alveoli (Novartis 1994)
- Infusion rates ≥ 20 mU / min can decrease free water clearance by the kidney via interaction with the vasopressin receptor in the kidney, resulting in water intoxication (Smith and Merrill 2006)
- Because of low concentrations of oxytocin receptors, the effectiveness of oxytocin for inducing labour in the second trimester of pregnancy is generally poor (Smith and Merrill 2006)

## Indications

- oxytocin is used to initiate uterine contractions and to maintain labour until delivery of the fetus is achieved
- For induction of labour after intrauterine fetal death (IUFD), the conventional oxytocin regimen should be used if gestation is > 34 weeks (see in PPG, oxytocin: augmentation and induction of labour infusion regimens)
- The oxytocin high dose regimen for IUFD is used at < 34 weeks of gestation or when other methods of induction have failed
- It can also be used for genetic termination of pregnancy when other methods of induction have failed

## Contraindications for a high dose regimen

- Uterine scar
- Grand multiparity
- Live viable fetus

## Dosage and administration

- The oxytocin high dose infusion is run as a separate line piggy-backed into the main line
- Prepare a main line infusion of either Hartmann's or 0.9 % sodium chloride (to keep vein open)
- Prepare a side line infusion of 100 units (10 ampoules) of oxytocin in either 1 litre of Hartmann's or 0.9 % sodium chloride and follow administration regimen as per table below
- Aim for 3 to 4 moderate to strong contractions per 10 minutes
- Do not exceed a oxytocin infusion rate of 60 mL / hour (100 mU / min)
- Continue regimen until delivery of the fetus
- Active management of third stage with 5-10 units of intravenous oxytocin given slowly

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### Table 102b Oxytocin high dose infusion regimen for IUFD

| Draw up 100 IU (10 ampoules) Oxytocin and add to 1 litre of either Hartmann's or 0.9 % sodium chloride solution | | |
|---|---|---|
| **Initial rate** | **increments** | **maximum** |
| 6 mL / hour<br>(10 mU / min) | Every 30 minutes<br>(until 3-4 moderate to strong contractions in 10 minutes are achieved) | 60 mL / hour<br>(100 mU / min) |

## Observations

### Assess the following

- Pulse and respirations and contractions every half hour while increasing intravenous oxytocin dosage
- Blood pressure, descent of presenting part, per vaginam loss every hour
- Temperature every 4 hours (every hour if febrile)
- Maintain fluid balance chart and restrict additional fluids if infusion rate exceeds 40 mL / hour
- Need for pain relief

### Observe for symptoms and signs of water intoxication

- Headache, nausea, vomiting and abdominal pain
- Lethargy, drowsiness
- Low blood electrolyte concentration
- Urinary output

## References


1. Smith JG, Merrill DC. Oxytocin for induction of labor. Clin Obstet Gynecol 2006; 49: 594-608 (Level IV)
2. McDonald S, Abbott JM, Higgins SP. Prophylactic ergometrine-oxytocin versus oxytocin for the third stage of labour (Cochrane Review). In: The Cochrane Library, Issue 2, 2004. Chichester, UK: John Wiley & Sons, Ltd (Level I).
3. Novartis Pharmaceuticals Australia. Syntocinon® (synthetic oxytocin). Product information Australia 1994.


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## Abbreviations

| | |
|---|---|
| IUFD | Intrauterine fetal death |
| mU | milliunits |
| min | minute |
| mL | millilitre/s |

## Version control and change history

**PDS reference:** OCE use only

| Version | Date from | Date to | Amendment |
|---|---|---|---|
| 1.0 | 18 Dec 06 | 18 May 10 | Original version |
| 2.0 | 18 May 10 | 15 Jan 13 | Reviewed |
| 3.0 | 15 Jan 13 | current | |
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