**Understanding the Licensed Dosage Range of Synthetic Oxytocin**

Historically, synthetic oxytocin has been used by obstetricians as if there is no licensed dosage range, although some were very cautious with it, respecting labour as a natural process, which the female body is perfectly equipped to complete nearly unaided, in the majority of cases.

In the UK there are a few suppliers of synthetic oxytocin for intravenous infusion. The excipients in these products are not identical.

The **instructions for dilution, starting dose, increases and spacing between increases** is described in the Summary of Product Characteristics, that may vary slightly between suppliers (since Brexit).

When midwives move hospital, they had best **re-read the instructions** of the supplier of synthetic oxytocin in the new place of work, for safety.

**Standard Strength of Diluted Synthetic Oxytocin**

The instructions are given for drip infusion, as this is the global standard (not requiring electricity).

For drip infusion 5 IU in 500 ml diluent provides **20 drops / ml**, making **10 mIU / ml** fully diluted Syntocinon© or Oxytocin©.

**Midwives**

Please familiarise yourself with the relationship between the volume of one drop - 0.05 ml - in which the dose 0.5 mIU is contained, by which **doses can be varied up and down by 0.5 mIU per minute**.

For use with infusion pumps, the solution created should retain this facility, so that the dosage can be altered per minute by 0.5 mIU, or 0.25 mIU per minute if a half-strength (2.5 IU in 500 ml) has been prescribed.

**(See downloadable Tables 1, 2 and 3 for 500 ml dilutions.)**

**Infusion Pumps**

There are two main types of infusion pump in use in UK hospitals.

**See ‘Bolus Functions’ below**.

Volume to be Infused (VTBI) is set to administer the infusion at a steady rate over a time period that corresponds to a safe dosage per minute.

Volumetric pumps create peristalsis on the infusion tubing from 500 ml solutions. The minimum volume deliverable over one hour is 0.1 ml.

Syringe drivers gently screw lateral pressure on the plunger of a loaded 50 ml syringe. The minimum volume deliverable over one hour is 0.01 ml. As with a peristaltic pump, volumes can be logged only to two decimal places after the point, and should be **rounded down for safety**.

Both kinds of pump are capable of administering per minute dosages, as in a drip infusion, ideally for time segment of 20 or 60 minutes, with local policy for administration permitting fine-tuning by 0.5 mIU per minute.

Strong concentrations - recommended by the Royal College of Obstetricians and Gynaecologists in 2001 - have come into use, which make it impossible to vary infusion rates by only 0.5 mIU per minute.

**Bolus Functions**

The company setting up the pump for use in Maternity Units should disable the bolus function. If pumps are shared by other departments, staff should know how to disable the bolus function prior to starting the synthetic oxytocin infusion, **because it is designed to cause pain**.

**A bolus of an unlicensed dilution** (eg 30 IU in 500 ml) **is dangerous.**

**This is a very good reason for the licensed dilution only**, so that if a pump gave an accidental bolus (before shutting down), it would have contained only 0.5 mIU or 0.6 mIU - **not likely to cause fetal distress**.

**(See downloadable Tables 6, 5 and 4 for 50 ml syringe drivers.)**

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