INTRODUCTION — The management of labour pain is a major goal of intrapartum care. There are two general approaches: pharmacologic and nonpharmacologic. Pharmacologic approaches are directed at elimination of the physical sensations of labour pain, whereas nonpharmacologic approaches are largely directed toward prevention of suffering. Suffering may be defined in terms of any of the following psychological elements: a perceived threat to the body and/or psyche; helplessness and loss of control; distress; insufficient resources for coping with the distressing situation; even fear of death of the mother or baby. Although pain and suffering often occur together, one may suffer without pain or have pain without suffering. The nonpharmacologic approach to pain management includes a wide variety of techniques that address not only the physical sensations of pain, but also attempt to prevent suffering by enhancing the psychoemotional and spiritual components of care. In this approach, pain is perceived as a side effect of a normal process (labour). In contrast to neuraxial anaesthesia, the primary goal is not to make the pain disappear. Instead, caregivers help the woman build her self-confidence and maintain a sense of mastery and well-being, factors which play a major role in her ability to cope with labour. Reassurance, guidance, encouragement, and unconditional acceptance of her coping style are used. The woman and her support person are guided and supported in using self-comforting techniques and nonpharmacologic methods to relieve pain and enhance labour progress. With this type of care, women perceive that they coped successfully with the pain and stress of labour and state that they were "able to transcend their pain and experience a sense of strength and profound psychologic and spiritual comfort during labour".

Nonpharmacologic techniques for management of labour such as intradermal sterile water injections, decrease back pain during labour, and, to a certain extent, the abdominal pain of labour. Estimates of the incidence of low back pain in labour range between 15 and 74 percent of all labours. Possible etiologies include a foetal occiput posterior position, persistent asynclitism, the woman's lumbopelvic characteristics, and referred pain from the uterus. There is anatomical support that low back pain in labour is actually referred pain since the corpus uteri and cervix are supplied by afferent neurons ending in the dorsal horn of spinal segments T10-L1 and cutaneous afferents from the low back converge in the same segments. While the exact mechanism of action is not known, it is presumed that "closing the gate" in gate theory and/or the release of local endorphins are responsible. The use of "unphysiological" sterile water is required. Physiological saline does not burn and does not work.

DESIRED OUTCOME/OBJECTIVE: To provide non-pharmacological relief of lower back pain in labour by administration of an intradermal injection of sterile water.

INDICATIONS for use include:
Active labour
Lower back pain
VAS of ≥ 6 (on a scale of 0 – 10)

DEFINITIONS:
VISUAL ANALOGUE SCORE (VAS): Assessment of pain using a scale of 1 – 10, with 0 being no pain and 10 being the worst pain imaginable.
INTRADERMAL INJECTION: within the dermis (skin)

1. Cleanse the area with an alcohol swab by wiping with a firm circular motion and moving outward from the injection site. Allow skin to dry.
2. Use nondominant hand to spread skin taut over injection site.
3. Remove needle cap with nondominant hand by pulling it straight off.
4. Place needle almost flat against patient’s skin, bevel side up. Insert needle into skin so that point of needle can be seen through skin. Insert needle only about 2 cms.
5. Rapidly inject agent while watching for a small wheal or blister to appear. If none appears, withdraw needle slightly.
6. Withdraw needle quickly at the same angle it was inserted.
7. Do not massage area after removing needle.
8. Do not recap used needle. Discard needle and syringe in the appropriate receptacle.
9. Remove gloves and dispose of them properly. Perform hand hygiene.

EXPLANATION AND CONSENT FOR PROCEDURE:
1. Assess woman’s need and suitability for the procedure.
2. Explain procedure to woman and obtain verbal consent. Patient information sheet is available on OHEPS.
3. Ensure woman knows there will be intense burning/stinging for up to 20 secs following injection and that pain relief should occur within 1-3 minutes. Duration of effect can vary from 1 – 3 hours.
4. Ensure woman knows that this procedure is effective at relieving severe back pain only.
5. Ensure woman knows this procedure is effective for approx. 85% of women.

EQUIPMENT:
Injection tray
4 x 1ml VanishPoint Tuberculin syringes with 25G retractable needle
Sterile water for injection
Alcohol wipes
Gloves
Sharps container
PROCEDURE:

- Draw up 0.1ml of sterile water into each of four (4) syringes. Ask the woman to point to where the pain is worst, inject her there. Ideally, two (2) clinicians should be available to administer the injections simultaneously as this will minimise the duration of stinging. (The sting may stop the woman from having the other side done if only one midwife does it).
- Have the partner hold the woman’s hands and talk her through the injections as she can automatically swipe at you when you give the injections.
- Position woman in a position which is comfortable for her but provides easy access to the sacral region. This could be a sitting position, leaning forward (similar position as required for epidural catheter insertion).
- Identify the four (4) anatomical landmarks on the woman’s lower back as follows:

Over each posterior superior iliac spine, 3cm below and 1cm medial to the posterior superior iliac spine or on the four points of an inverted trapezoid shape on the woman’s sacrum.

- Cleanse injection sites with an alcohol swab to reduce chance of infection.
- With a contraction the two clinicians use one (1) syringe each to simultaneously inject 0.1ml – 0.3 ml of sterile water intradermally at two (2) of the four (4) injection points. The injection should raise a visible ‘bleb’ under the skin (at least 0.5cm diameter). Rapidly inject 0.1 of water intradermally at each site. Two midwives complete two injections simultaneously then inject the other two sites simultaneously. It is best to make the first two injections on opposite sides, as these two injections alone may provide satisfactory results.
- With the next contraction and using the remaining two (2) pre-prepared syringes, the clinicians simultaneously inject 0.1ml – 0.3 ml of sterile water at the two (2) remaining injection points.
- Leave the area alone! the sting is the thing. Avoid touching, rubbing, massaging or any other counter pressure to the injection sites for 30 min following procedure as this may reduce the effect.
- Discard sharps to prevent needle stick injuries.
DOCUMENTATION:
Documentation of the procedure is to be recorded on the woman’s partogram, and in the woman’s medical record of the administration of sterile water injections. Documentation to include the woman’s consent, pain score (VAS) pre and post procedure, the amount of water used and time of injections. Observe woman for effectiveness of procedure.

REASSESSMENT:
Reassess VAS at five (5) and ten (10) minutes after completion of the intervention, and according to clinical judgement thereafter. If inadequate analgesia is obtained or the analgesic effect has subsided, the intervention may be repeated after 30 minutes if VAS ≥ 6. Assess for signs of local skin irritation and use clinical judgement to determine the appropriateness of repeating the intervention. There is no evidence to suggest a limit be placed on the number of times the intervention may be performed. Procedure can be repeated after 30/60 and as often as necessary. Duration of effect can vary from 1 – 3 hours.

ISSUES TO CONSIDER:
• Absolute accuracy is not critical to success of procedure.
• The success of this form of pain relief depends on the sterile water being given intradermally. Administer the water injections into the skin, it’s intra – dermal, not sub cutaneous, not under the skin, the idea is to raise a little bleb which stretches the skin and sets off the receptors.
• The success of this intervention is reliant upon sterile water being administered intradermally as subcutaneous injections are ineffective.
• Sterile water is effective at relieving severe back pain. It does not relieve other pain.

COMPETENCY REQUIREMENTS:
Achieving competence requires (as a minimum) the clinician to have observed the procedure once and then demonstrated the skill to a competent practitioner and CSAT to be completed.

ATTACHED READING:
Sterile water injection for labour pain: a systematic review and meta-analysis of randomised controlled trials
EK Hutton, M Kasperink, M Rutten, A Reitsma, B Wainman
McMaster University, Hamilton, ON, Canada b Midwifery Academy of Amsterdam and Groningen, Amsterdam, the Netherlands.

REFERENCES:
Queensland Health- Royal Brisbane and Women’s Hospital; Maternity Service, Women’s and Newborn Services; Intradermal Sterile Water Injections for Lower Back Pain in Labour, August 2011

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