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"No pain, no gain": The experience of women using sterile water injections

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ABSTRACT

Problem/background: Sterile water injections (SWI) are gaining popularity amongst women and midwives for the relief of back pain in labour. However the brief but intense pain associated with the injection has been cited as a deterrent to use and may negatively affect the birth experience.
Aim: To explore women's experiences of using sterile water injections as analgesia for back pain in labour.
Design: A qualitative study, which generated data through individual semi-structured interviews with postnatal women. Data were analysed thematically.
Setting: Two metropolitan maternity units in Queensland, Australia.
Participants: Nine postnatal women who had participated in a randomised controlled trial investigating the use of sterile water injections for back pain in labour
Findings: Three major themes were identified including sterile water injections as a non-pharmacological injection; balancing injection pain against expectations of pain relief; the analgesic effect of sterile water injections.
Key conclusions: Women in this study largely viewed sterile water injections as an effective analgesia with few side effects. The pain associated with the injection of sterile water was weighed against the likelihood of rapid, effective pain relief. Women used the period of analgesia to support their objectives, be this a period of respite during the labour or to enhance the ability to focus on the birth experience. Information on SWI provided by health professionals should also balance realistic descriptions of the injection pain with prospect of analgesia.

Statement of significance

Problem or issue

Sterile: Water injections causes a brief intense pain on administration that may negatively affect the birth experience and deter women from using the procedure.

What is already known

Based on subjective pain scales women report both pain and analgesia following sterile water injections administration.

What this paper adds

The administration pain associated with sterile water injections should not, of itself, be considered a deterrent to women using the procedure.

1. Introduction

Sterile water injections (SWI) are increasingly being used by midwives to provide pain relief for women experiencing back pain in labour.[1] The procedure consists of small amounts of sterile water (0.1–0.3 ml) injected just under the skin (intrademally) at four points surrounding the area of back pain.[2] The injection of sterile water is associated with a significant, but relatively brief, painful sensation lasting 20–40 s.[3,4] In one randomised controlled trial (RCT) women rated the pain of water injections, on a visual analogue scale (VAS) as being greater than the pain they were

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experiencing with contractions at the time.[2] The injection pain has been highlighted as a deterrent, despite satisfaction with the analgesic effect.[2,3,5]

1.1. Women's satisfaction with SWI

Studies that have reported on maternal satisfaction, and the likelihood that women would use SWI in subsequent labours, used closed question response scales to collect this data. However, the satisfaction data was reported within these studies as-secondary outcomes and the often small sample sizes limit the generalisation of results.[2,6–10] Similar levels of perceived effectiveness were reported (Lytzen et al., 78% n = 83, Mårtensson et al., 73% n = 88, Peart 90% n = 60, Lee et al., 75% n = 265).[2,7,8,10] The percentage of women (the majority across all studies) who would consider using the procedure in a subsequent labour was also similar (Lytzen et al., 80%, Trolle et al., 70%, Mårtensson et al., 79%, Labrecque et al., 90%, Lee et al., 75%).[2,6–9]

The prospective cohort study by Peart et al.[10] included a questionnaire item which asked women to describe aspects of their experiences of SWI on a 'best' and 'worst' basis. Pain relief (65%) and lack of side effects (25%) were the most commonly cited 'best' aspects however, 96% rated the injection pain as the worst aspect. The RCT (n = 305) by Lee et al.[2] used a similar questionnaire also reporting the effectiveness of analgesia (54%), and the speed of onset (26%) were viewed as the 'best' aspects, with the injection pain (74%) as the 'worst' aspect. Furthermore, women who were dissatisfied with the analgesic effect were significantly more likely to rate the injection pain as the worst aspect, suggesting that injection pain may be more acceptable if associated with effective pain relief.

1.2. The National Institute for Health and Care Excellence (NICE) guidelines recommendations on the use of SWI

The NICE guidelines on ntrapartum care: Care of healthy women and their babies during childbirth, is widely regarded and respected as a leading source of evidenced based information and recommendations for clinical practice.[11] The guidelines have a significant influence on maternity care practice in the United Kingdom and internationally. The guideline discusses women's intentions for using SWI as pain relief in a subsequent labour and cites the study by Labrecque et al.,[6] where women in the SWI group were less likely to consider using the procedure again, however there were only 10 participants in this group compared to two other trials cited (n = 371) in which women were significantly more likely to use SWI again.[8,9] The NICE guideline review of SWI concludes with the Evidence Statement: "*There is a lack of evidence of the benefit of injected water papules on birth experience or clinical outcomes*" (*section 8.3.6.3, p. 333*). The NICE guidelines identified an evidence gap which this paper addresses. The aim of this study was to describe women's experiences of using SWI for back pain in labour.

2. Participants, ethics and methods

2.1. Study design

A qualitative sub-study of women enrolled in a RCT, conducted at two metropolitan hospitals in Queensland, Australia, examining the use of SWI for back pain in labour (Sterile Water Injections Techniques Comparison: SWITCh trial).[2] Approval for the study was provided by the Hospital Human Resources Committees where the study was conducted (HREC/10/QRBW/406, 1595M), and by the University where the first author was enrolled as a Doctoral student at that time (Q2010 51).

Table 1
Guides for individual interviews.

Domain	Guiding prompts
Knowledge of SWI	Did you hear about SWI during pregnancy When did you first consider SWI Who's idea How did you feel about using SWI Anxious, curious, relieved, uncertain How did the midwife discuss it with you Attitudes of support persons to SWI
Receiving the injections	Experience of receiving the injection(s) Waiting for contraction and injections Would it have been easier given between contractions How long did the injection discomfort last Did the stinging exceed expectations
Effect on back pain	Experience of the effect Relieved/unrelieved Compare with expectations (if any) Pain of injections vs effect Effect on labour/pain/coping/attitude Duration
Overall experience	Consider repeat SWI why why not (if repeat SWI) as above Overall how did you feel about using SWI for you backpain Consider using swi in next labour why why not Consider recommending to others why why not

2.2. Participants data collection and analysis

Methods for recruitment, data collection and analysis of this sub-study have been previously described.[12] In summary, women who took part in the SWITCh trial were invited by an independent research midwife to participate in the qualitative arm. The women were advised that the study was separate to the SWITCh trial and formed part of the first authors PhD studies. The researcher conducting the interviews had no prior relationship with the participants. Individual interviews with postnatal women (n = 9) were conducted by the first author over a four month period and took place within the women's homes. Interview guides were developed by the first and third author (academic supervisor) (Table 1) based upon domains identified in the literature. Prompting questions (e.g. Did you hear about SWI during pregnancy?) were used to introduce each domain if these did not arise spontaneously during the interview. Interviews lasted approximately 45 min, were audio recorded (accompanied by field notes), transcribed verbatim by a third party, and verified by the first author. Independent data coding was undertaken by the first and third author, and where inconsistencies occurred these were resolved prior to establishing the final coding scheme. NVivo qualitative data analysis software (QSR International Pty Ltd. Version 8, 2009) was used to facilitate the coding of the transcribed text prior to thematic analysis.[13]

To ensure that the themes and definitions accurately reflected the data, they were reviewed against the original text. Subthemes underwent a process of collapsing and merging through iterative reading and reflection on the data. Data saturation was determined with the final thematic structure.[14] Participant checking was not undertaken.

3. Results

Participant description and demographics are provided in Table 2. Data analysis identified three distinct themes; (i) SWI as a non-pharmacological injection; (ii) Balancing injection pain against expectations of pain relief; (iii) The analgesic effect of SWI.

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