STERILE WATER INJECTION FOR THE MANAGEMENT OF BACK PAIN DURING LABOUR

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INTRODUCTION

- Back pain in labour can be significant, especially with posterior presentations [1].
- Treatment for back pain can lead to further complications, such as the increased use of pharmacological pain relief leading to increased risk of medical interventions and subsequent adverse outcomes as a result [1] [2]
- Sterile Water Injection is a non-pharmacological method of pain relief that involves subcutaneous injection of sterile water in the lower back [1].
- Sterile Water Injections (SWI) have been trialed elsewhere for the reductions of back pain, and are now offered at Auburn Hospital
- This study is a **quality assurance** project to assess the effectiveness of the SWI when routinely offered to women at Auburn Hospital

AIMS

- Determine whether intradermal sterile water injections provide **effective pain relief** for women with lower back pain in early and active labour
- **identify any impact in rates of intrapartum caesarean section** rate, compared with the publicly available data for Auburn Hospital from the 2018 Mothers and Babies Report [3]

OBJECTIVES

- Investigate the **efficacy** of SWI for the reduction of back pain in labouring women at Auburn Hospital following implementation of the SWI protocol as standard care.
- To determine **obstetric outcomes**, including epidural analgesia, other pharmacological pain relief and mode of birth

METHODS

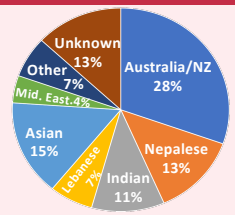
Study Design
- Prospective pre and post study of SWI, using pain scores as the measure

Data Collection
- Midwives at Auburn Hospital were trained in August 2018 to administer SWI, and instructed to offer it to all women with significant back pain in labour.
- Pain scores were collected pre- and post-SWI on a VAS during labour at **6 months post implementation** (2/2/19) and **18 months post implementation** (13/01/20)

Data Analysis
- Compared pre- and post- SWI pain scores using **paired t test**, reporting difference in mean values and 95% confidence intervals
- Examined demographic data using frequencies, compared with published, publicly available data [3]
- Compared pregnancy and labour variables with labour outcomes using **Chi Square** analysis and reporting a risk ratio

RESULTS

Demographic Data	n=46
Average Age	28 years
Average gestational age	39+5
Primiparity	52%
Australian Born	28%



Pain Scores

- There was a significant difference between the pain scores before and after the administration of SWI

	Pre- SWI	Post- SWI	p value
Mean VAS Pain Score	8.83	4.35	<0.0001

Obstetric outcomes

- The **NSW Mothers and Babies Report 2018** was used to compare the obstetric outcomes of our cohort to those of the general obstetric population at Auburn Hospital (AH) [3]
- The total number of births at Auburn Hospital was **1466** in 2018
- There was a non-significant increase in intervention rates, including CS, instrumental vaginal birth and requirement for neonatal resuscitation

Obstetric Outcomes	SWI (%) n=46	AH (%) n=1446	p value
Instrumental Vaginal Birth	17	30	0.9
Intrapartum CS	16	10	0.1
Epidural	38	39	0.9
Neonatal Resuscitation	9	15	0.1

DISCUSSION

1. SWI provided effective pain relief for back pain during labour

Our study found a statistically significant decrease in pain score between pre- and post- SWI administration. This was an expected finding as other published data shows similarly significant reduction in pain scores after the administration of SWI [4].

2. SWI caused an increase in the rates of obstetric intervention at Auburn hospital

- In contrast to previously published data, this study found that there was an increased rate of obstetric intervention in the study group compared to the general obstetric population at Auburn Hospital.
- Hutton *et al.,* concluded a significantly lower rate of Caesarean section following SWI compared to controls (4.6% in the SWI group and 9.9% in comparison group; p=0.01) [2].
- Derry and others found a (non-significant) two-fold decrease in the rates of caesarean section between study group and placebo (4.4% vs 8.1% respectively, p=0.58) [1].
- Both authors did not document a statistically significant difference in uptake of epidural analgesia in both study and comparator groups [1][2]
- The findings of this study finding may be attributed to the small sample size of the cohort (n=46), which constitutes 3% of the general obstetric population of Auburn Hospital (n=1466) [3]

Demographically, the SWI cohort was not characteristic of typical NSW obstetric cohorts

- Significantly higher proportion of culturally and linguistically diverse populations in the cohort at Auburn Hospital, compared to the general NSW birth population (61.8% of NSW mothers identified as Australian vs 28% of SWI cohort) [1]
- Husarova., *et al* described that migrant women significantly less likely to utilize pain relief during labour which may influence generalizability of results from Auburn Hospital [5]
- The participants in the study were on average younger than the typical NSW birthing cohort (28 years old in SWI cohort vs. 30.9 in published NSW data) which may also explain differences in uptake of analgesia [3]

CONCLUSIONS/ FUTURE DIRECTIONS

- SWI is a promising means of non-pharmacological pain relief which can possibly reduce the cascade of obstetric intervention during labour and birth.
- Further study is needed into the efficacy of SWI at a larger scale with appropriate investigation of subsequent obstetric outcomes after SWI administration
- This study is expected to continue for at least another 6 months with the aim of increasing the cohort sample size

References

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