

Impact of induction of labour on rates of successful VBAC1 at a leading Australian centre

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Background

In women with one previous lower uterine segment caesarean section (LUSCS) who are aiming for a vaginal birth after caesarean (VBAC1), trial of labour after caesarean (TOLAC) options include induction of labour (IOL) or awaiting spontaneous onset. IOL is generally considered when the risks of ongoing pregnancy are considered to outweigh the benefits, and RANZCOG guidelines on birth after Caesarean quote intrapartum LUSCS rates for TOLAC of 33% (induced), 26% (augmented) and 18% (spontaneous), based on studies in 2004/5 in a North American population^{2, 3}. Counselling of women desiring TOLAC when an IOL is indicated is therefore complex. This study aims to analyse impact of IOL on VBAC1 success rates at a level 5, peripheral urban Australian maternity service, recently ranked top 3 for VBAC in WHA data⁴.

Objectives

Primary outcome:

- VBAC success rate after TOLAC with either IOL or spontaneous labour – vaginal +/- instrumental birth, emergency LUSCS

Secondary Analyses:

- Instrumental delivery rate
- Syntocinon use – induction or augmentation
- Major complication of uterine rupture/dehiscence

Methods

Design:

- Retrospective audit using data from the Queensland Perinatal Data Collection, and verified with patient records

Population:

- 514 women with one previous LUSCS who had a TOLAC at a level 5 maternity facility between 01/05/2014 to 30/04/2019

Exclusion Criteria:

- Multiple gestational pregnancy
- IUFD prior to delivery

Results

Primary Outcomes:

- Spontaneous labour rate 69.2%, IOL rate 30.7%
- Overall VBAC1 rate of **78.5%** :
 - **VBAC1 (Spont) 83.7%, VBAC1 (IOL) 67.1%**
- **Significant difference** between VBAC1 in spontaneous labour vs IOL of **16.6%** (95% CI 8.57-25.0%, P<0.0001)

Secondary Analysis:

Instrumental delivery

- No significant increase in instrumental delivery regardless of mode of labour onset

Syntocinon use:

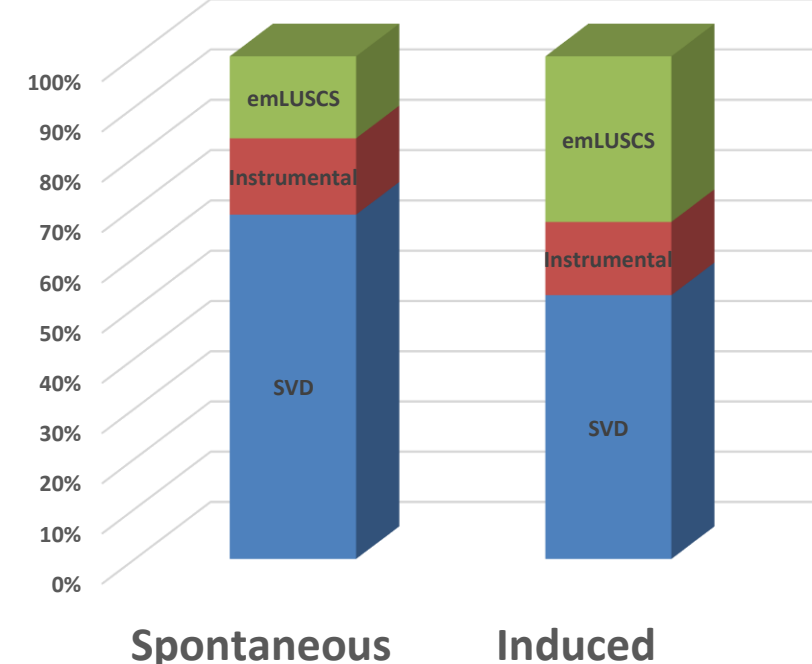
- Significant increase in emLUSCS rate with syntocinon use in spontaneous labour (34% vs 17%; p < .05); No significant effects with syntocinon use in IOL

Rupture – one reported case of uterine rupture

Table 1: Mode of labour onset, syntocinon use, and delivery mode (2014 – 2019)

	Total	SVD		Instrumental		emLUSCS	
Spontaneous							
Total	356	244	69%	54	15%	58	16%
No Synto	316	224	71%	47	15%	45	14%
Synto	40	20	50%	7	18%	13	33%
Induced							
Total	158	83	53%	23	15%	52	33%
No Synto	68	36	53%	11	16%	21	31%
Synto	90	47	52%	12	13%	31	34%

Mode of Delivery



Conclusions/Discussion

- Our VBAC success rates for all modes of induction are similar to those quoted in guidelines.
- We showed that IOL of TOLAC significantly increased the rate of emLUSCS (67.1% vs 83.7%), but did not increase instrumental delivery
- There was no increase in LUSCS or instrumental rate with syntocinon use in those women who laboured spontaneously, and although syntocinon use in those who had an IOL was associated with a decrease in VBAC success the vaginal birth rate was 69%.
- This result is limited by the study design and potential confounders, however, as indications for IOL continue to increase, this recent, local Australian data is of value in informing patient decision making and clinician counselling and practice regarding IOL of TOLAC.

References:

1. Royal Australian and New Zealand College of Obstetricians and Gynaecologists 2019, "C-Obs 38 Birth after previous caesarean section"
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3. Landon MB, Leindecker S, Spong CY, Hauth JC, Bloom S, Varner MW, et al. The MFMU Cesarean Registry: factors affecting the success of trial of labor after previous cesarean delivery, Am J Obstet Gynecol. 2005;193(3 Pt 2):1016-23
4. Women's Healthcare Australasia 2018, "Benchmarking Maternity Care 2017-18".