

# Are the risks of OASIS similar in women having primary VBAC vs nulliparous women undergoing first vaginal delivery?

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## BACKGROUND

The risk of OASIS in nulliparous women has been quoted in the literature to be approximately 6%<sup>1, 2</sup>. However, the data on the incidence of OASIS in women attempting VBAC is conflicting. Although a recent Australian study<sup>3</sup> has found that there was no increased risk of OASIS in women attempting VBAC, several other studies have shown an increased risk of OASIS<sup>4, 5</sup>, with the odds ratio being 1.4 in one study of over three thousand women undergoing VBAC<sup>4</sup>.

We, therefore, set out to evaluate the impact of VBAC on the pelvic floor, in particular rates of OASIS so that we can provide better counseling to our Gold Coast women.

## OBJECTIVE

The aims of this study is to compare the incidence of OASIS in women undergoing primary VBAC to that of nulliparous women having their index delivery.

## METHODS

### Design:

- Retrospective cohort study between 01/07/2014 to 31/12/2017 at a tertiary maternity hospital on the Gold Coast, Queensland
- Cases were identified using the Maternity Information System (MATIS). Patient demographics, intrapartum characteristics and outcomes were analyzed.

### Population:

- Women having their second delivery after a prior caesarean section vs. nulliparous women during their first pregnancy
- Exclusion Criteria:**
  - Multiple pregnancies
  - Delivery at gestational age  $\leq 36$  weeks
  - IUFD prior to delivery

### Outcomes:

- Primary: The rate of OASIS injury in the two groups
- Secondary: Birth-related outcomes including the rate of operative delivery, regional anaesthesia, and episiotomy

### Statistical analysis:

Categorical variables were analyzed with Pearson's chi-square test, and continuous variables with independent t-test

## RESULTS

- During the study interval, **68.6% (227/331)** women were successful with their trial of VBAC, whilst **76.5% (5365/7017)** of nulliparous women had a successful vaginal delivery.
- The OASIS rate in the VBAC group was slightly higher compared to the nulliparous group (**8.8% vs 7.9%**, **P-value = 0.613**), but this difference was not statistically significant.
- The rate of instrumental delivery was similar between the two groups (**31.3% vs 29.6%**, **P-value = 0.592**)
- Other potential risk factors for OASIS such obesity, birthweight  $\geq 4000g$  were not statistically different either.
- The episiotomy rate between the two groups were comparable.
- The use of neuraxial anaesthesia in the nulliparous group was much higher than in the VBAC group.

TABLE 1. DEMOGRAPHICS AND OUTCOMES

Characteristics	Nulliparous (n = 5365)	Primary VBAC (n = 227)	P-value
Mean Maternal Age (years)	27.9 $\pm$ 5.2	30.8 $\pm$ 5.1	< 0.00001
Mean Booking BMI (kg/m <sup>2</sup> )*	23.5 $\pm$ 4.9	24.3 $\pm$ 4.8	< 0.05
Mean Birthweight (g)	3392 $\pm$ 442	3513 $\pm$ 433	= 0.0659

\* 45 nulliparous and 2 VBAC women did not have their booking BMI recorded

Outcomes	Nulliparous (n = 5365)	Primary VBAC (n = 227)	P-value
OASIS Rate (%)	7.9% (423/5365)	8.8% (20/227)	= 0.613
Operative Delivery Rate (%)	29.6% (1589/5365)	31.3% (71/227)	= 0.592
Booking BMI $\geq 30$ (%)	9.76% (519/5320)	11.1% (25/225)	= 0.503
Birthweight $\geq 4000g$ (%)	12.9% (694/5365)	12.3% (28/227)	= 0.791
Epidural/Spinal/CSE Rate (%)	55.8% (2996/5365)	33.5% (76/227)	< 0.00001
Episiotomy Rate (%)	28.7% (1542/5365)	27.8% (63/227)	= 0.747

## CONCLUSION/DISCUSSION

- The initial analysis does not appear to show an increased risk of OASIS in the VBAC group.
- There was no increase in the rate of operative delivery, number of babies with birthweight  $\geq 4000g$  in the VBAC group.
- The VBAC group had an older population, higher mean BMI and a lower use of neuraxial anaesthesia.
- Several limitations exist for this study. Potential errors in data entry into MATIS may affect the accuracy of the final results. Additionally, ethnicity was not examined as data from MATIS was incomplete in this aspect.

## REFERENCES

- Jha S, Parker V. Risk factors for recurrent obstetric anal sphincter injury (rOASI): a systematic review and meta-analysis. *Int Urogynecol J* 2016; 27:849.
- Thiagamoorthy G, Johnson A, Thakar R, Sultan AH. National survey of perineal trauma and its subsequent management in the United Kingdom. *Int Urogynecol J* 2014;25:1621-7.
- Nettle JAS, McNamara HC; Du Plessis JM. Perineal trauma with vaginal birth after a previous caesarean section: A retrospective cohort study. *Aust N Z J Obstet Gynaecol* 2018; 1-5
- Hehir MP, Fitzpatrick M, Cassidy M, Murphy M, O'Herlihy C. Are women having a vaginal birth after a previous caesarean delivery at an increased risk of anal sphincter injury? *BJOG* 2014;121:1515-1520
- Räsänen S; Vehviläinen-Julkunen K; Cartwright R; Gissler M; Heinonen S. A prior caesarean section and incidence of obstetric anal sphincter injury. *Int Urogynecol J* (2013) 23:1331-1339