

# Instrument use influencing obstetric anal sphincter injuries (OASIS) at a tertiary level obstetrics hospital. A 2 year retrospective study at the St George Hospital, Kogarah, NSW.

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## Introduction:

In 2016, the rate of OASIS in Australia was 5.3%. OASIS has significant implications for patients such as anal incontinence, urinary incontinence, perineal pain and dyspareunia. A number of risk factors for OASIS have been identified including being of Asian or Indian ethnicity, operative vaginal birth, persistent occipito-posterior position and rapid uncontrolled delivery of the head. What is not known is whether clinicians who more commonly use forceps have a higher rate of OASIS than those who more commonly use vacuums. Given the paucity of data on this risk, we report on the the rate of OASIS by clinicians performing instrumental delivery with Neville Barnes Forceps compared to Kiwi Cup extractor.

## Objective:

To determine if a clinicians use of Neville Barnes Forceps or Kiwi Cup influences the rate of OASIS after instrumental delivery.

## Method:

Data was extracted for all births from a tertiary care center between 2017 – 2018. All term cephalic singleton instrumental births were included. Multiple pregnancies, premature birth and those with fetal anomalies were excluded. The analysis compared clinical outcomes for a cohort of women undergoing instrumental delivery with either Neville Barnes Forceps or Kiwi Cup extractor. The primary outcome measured was OASIS. For each clinician, the percentage of Neville Barnes Forceps and Kiwi Cup Extractor use was calculated. The OASIS rate was then determined. Clinicians with fewer than 10 instrumental deliveries were excluded.

## Results:

1009 instrumental deliveries occurred over the 2 year period with 51 OASIS. 417 Neville Barnes deliveries and 592 Kiwi Cup deliveries. All Clinicians were registrars with varying level of experience.

## Discussion:

OASIS is a risk following both Neville Barnes and Kiwi Cup delivery. Generally as the number of instruments performed by each clinician increased so did the incidence of OASIS.

Instrumental delivery itself is a recognized risk factor for OASIS. One theory is that this observed variation is due to the indication for use of for Neville Barnes in preference to the Kiwi Cup in more difficult assisted vaginal deliveries and thereby increasing the force applied to the perineum. Another theory includes increased risk as a result of decreased operator skill with Neville Barnes delivery or the design of the shaft and blades of the Neville Barnes in comparison to the handle of the Kiwi Cup and how the perineum is stretched.

## Conclusion:

**In the analysis of 1009 women undergoing instrumental delivery at term, the incidence of OASIS was higher amongst doctors who used forceps at a higher rate.**

DOCTOR	Percentage Neville Barnes deliveries	Percentage OASIS with Neville Barnes	Percentage OASIS with Kiwi Cup	Overall OASIS Rate
S 5th year	18%	18%	8%	10%
H 5th year	27%	0%	0%	0%
G Fellow	27%	14%	11%	12%
T 1st year	27%	6%	0%	2%
V 1st year	28%	4%	2%	2%
B Consultant	31%	20%	0%	6%
L SRMO	32%	0%	0%	0%
R 1st year	38%	13%	0%	5%
P 1st year	39%	0%	0%	0%
J 4th year	43%	7%	0%	3%
Q 5th year	43%	4%	0%	2%
U 2nd year	43%	17%	4%	10%
K first year	46%	25%	0%	11%
O 3rd year	47%	19%	0%	9%
A 4th year	53%	25%	0%	13%
E 2nd year	55%	17%	10%	14%
F 3rd year	55%	25%	10%	18%
I 1st year	55%	6%	0%	3%
D Consultant	57%	0%	0%	0%
M 3rd year	72%	0%	0%	0%
N 3rd year	94%	0%	0%	0%