



Predicting Obstetric Anal Sphincter Injuries (OASIS)

St. George Hospital, Pelvic Floor Unit

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Significance³⁻⁵

Short Term	Long Term
Pain	Urinary Incontinence (UI)
Infection	Anal Incontinence (AI)
Dyspareunia	Desire for future pregnancies
	Mode of delivery



Significance^{1-2,4,7}

- Alteration in bowel continence is common after vaginal delivery (new symptoms can occur in up to 44 % of women)
- Ranges from flatus incontinence, faecal urgency to soiling
- OASIS is the most common cause of fecal incontinence in women
- 1/3 to 2/3 of women who obtain a 3rd degree tear develop fecal incontinence
- OASIS can effect women physically & emotionally



Risk Factors (Known)^{1-4,7}

- **Instrumental Delivery (forceps > vacuum)**
- **Prolonged 2nd stage (> 2 hours without epidural)**
- **Birth weight > 4 kg**
- **Persistent occipitoposterior**
- **Episiotomy**
- Nulliparity
- Induction of labour
- Shoulder dystocia
- Epidural anesthesia
- Racial background



The Study

- A prospective study



Aim

- To determine predictive factors for OASIS by comparing pre-existing data of primiparous women who sustained OASIS to a control population
- To date, evidence comparing tear groups to a control population is lacking



The Pelvic Floor Unit (PFU)

- All women with OASIS are seen at the PFU at 6 to 8 weeks post partum
- They are reviewed by a urogynaecologist, nurse and physiotherapist
- The women are seen again in 6 months time for anorectal physiology (endoanal US, manometry, pudendal nerve latency and anal canal sensitivity)



Patients – Tear Group

- Primiparous women
- Sustained an OASIS and received follow-up care at the PFU
- Pre-existing data as part of database at PFU

South Eastern Sydney Illawarra Area Health Service	MRN BAR CODE <small>AFFIX ADDRESSOGRAPH LABEL HERE</small>
THIRD DEGREE TEAR	

DATE _____ TIME _____ DOCTOR _____

Accoucheur: Midwife, RMO, Registrar, Consultant Time of Delivery _____

Type of Delivery

Spontaneous Vaginal Delivery Vacuum Delivery
 Forceps Delivery Forceps Type _____
 Failed instrumental delivery and caesarean section Episiotomy midline right mediolateral

Indication for episiotomy _____

Who performed episiotomy _____

Was an epidural in situ at delivery (circle): YES / NO

Birth Position

Supine (with lithotomy) Semi recumbent Seated position
 Supine without lithotomy Standing All fours
 Lateral Squatting

Pushed For _____ Minutes

Delivery Details

Controlled panting Hands off technique
 Uncontrolled pushing Rapid delivery of shoulders
 Rapid delivery of head Guarding of Perineum
 Duration of second stage _____ Waterbirth

Perineal Injury Details / Classification

Spontaneous Perineal Tear Extension of episiotomy into anal sphincter
 Position of sphincter tear? Midline 9-O'clock 3-O'Clock
 Other (describe) _____ Anal mucosa / rectal mucosa involvement?

Sultan Classification

Grade 3a (<50% sphincter torn)
 Grade 3b (>50% thickness or external sphincter torn)
 Grade 3c (internal sphincter also torn)
 Grade 4 (Disruption of the anal / rectal epithelium)

Head Position at Birth

OA

OP

Other _____



HOSP ID _____ MRN _____
 SURNAME _____
 OTHER NAMES _____
 DOB _____ SEX _____ AMO _____

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South Eastern Sydney Illawarra
 Area Health Service

MRN BAR CODE

AFFIX ADDRESSOGRAPH LABEL HERE

THIRD DEGREE TEAR

Who assessed the degree of the tear? (circle) Midwife / RMO / Registrar / Consultant

Who repaired the tear? (Most senior person in the room)

- | | |
|--|---|
| <input type="checkbox"/> RMO | <input type="checkbox"/> Register 1 - 3 |
| <input type="checkbox"/> Registrar 4 - 6 | <input type="checkbox"/> Fellow |
| <input type="checkbox"/> Consultant Urogynaecologist | <input type="checkbox"/> Colorectal Surgeon |
| <input type="checkbox"/> Consultant Obstetrician | |

Where was the repair performed?

- | | |
|---|--|
| <input type="checkbox"/> Delivery Suite | <input type="checkbox"/> Operating Theatre |
|---|--|

Analgesia

- | | | | | |
|------------------------------------|--------------------------------|-----------------------------------|---------------------------------|-----------------------------|
| <input type="checkbox"/> Gas & Air | <input type="checkbox"/> Local | <input type="checkbox"/> Epidural | <input type="checkbox"/> Spinal | <input type="checkbox"/> GA |
|------------------------------------|--------------------------------|-----------------------------------|---------------------------------|-----------------------------|

Type of Repair

- | | | |
|--------------------------------------|-------------------------------------|--|
| <input type="checkbox"/> Overlapping | <input type="checkbox"/> End-to-end | <input type="checkbox"/> PDS used YES / NO |
|--------------------------------------|-------------------------------------|--|

Size and type of suture used for sphincter _____

Post-op antibiotics? YES / NO If yes, which one _____ No. of days _____

Post-op stool softeners? YES / NO If yes, which one _____ No. of days _____

Please draw the tear below

Additional repair details / notes / follow-up

DR _____ Signature _____

BINDING MARGIN - NO WRITING



Patients – Control Group

- Primiparous women
- (Or multiparous if previous birth via LSCS)
- Did not sustain a 3rd or 4th degree tear
- Consented by Registrar or RMO
- Registrar or RMO completed a questionnaire which resembled 3rd degree tear pro forma
- RN from PFU contacted the women at 6 weeks for follow-up



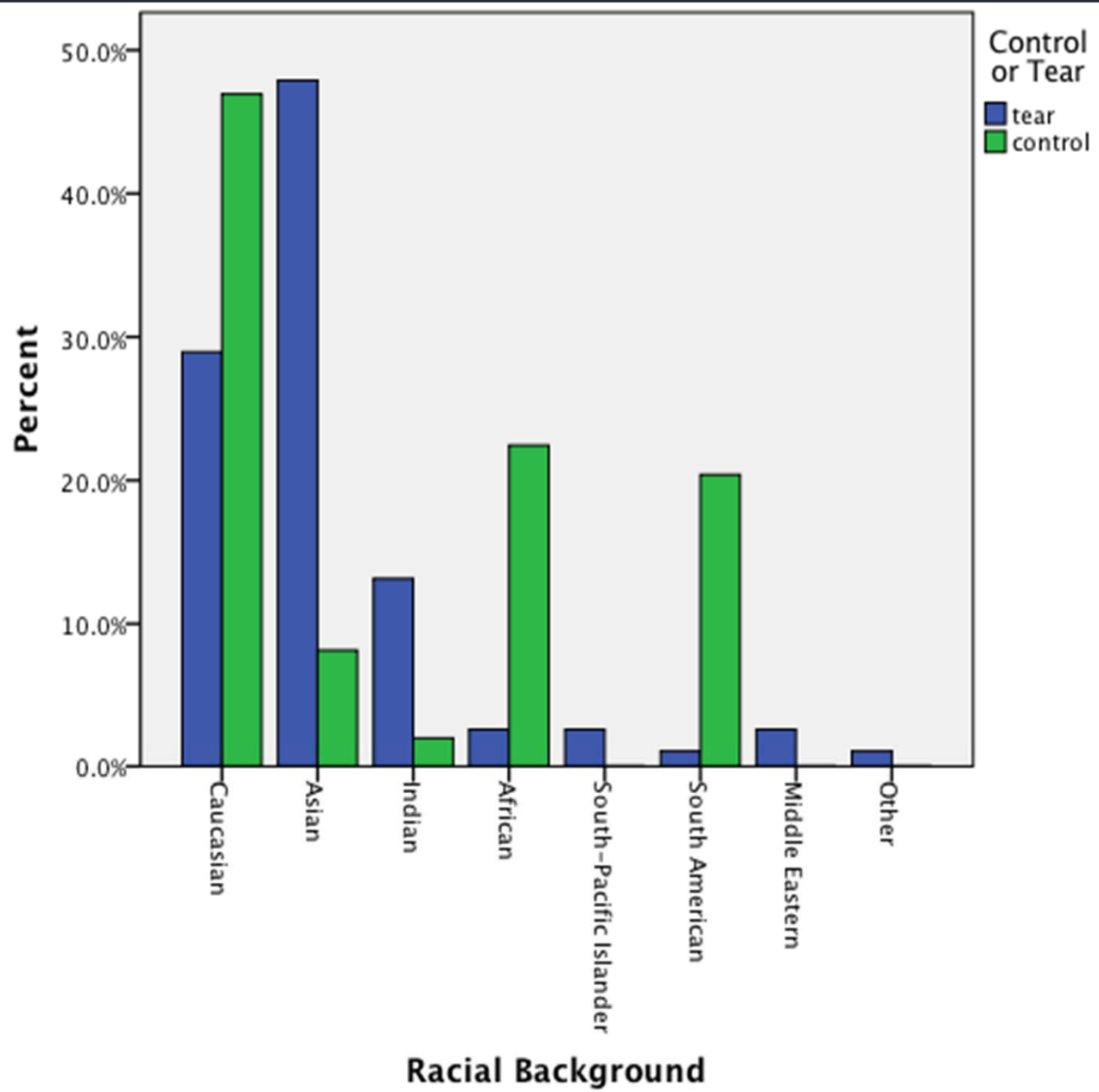
Results (Preliminary Analysis)

- 222 Primiparous women who sustained OASIS
- 49 Controls
- Age range 17 to 41 (not statistically difference)



Results (Patient Details)

- **RACE**
- Significant difference
- P value .000 (95 % CI -1.091 to - .120)
- Asian women – 48% in tear & 13 % in control
- Indian women – 22 % in tear & 8 % in control





Results (Birth Details)

▪ LABOUR ONSET

- Labour onset Spontaneous (63%) > Induction (37%) in controls

▪ BIRTH POSITION

- No statistical difference
- In both groups supine with lithotomy & semi-recumbent were most common

▪ DELIVERY DETAILS

- No statistical difference
- Controlled panting more common in controls (88 % vs. 46 %)
- Uncontrolled panting more common in tears (12 % vs. 8 %)



Results (Birth Details)

▪ DELIVERY TECHNIQUE

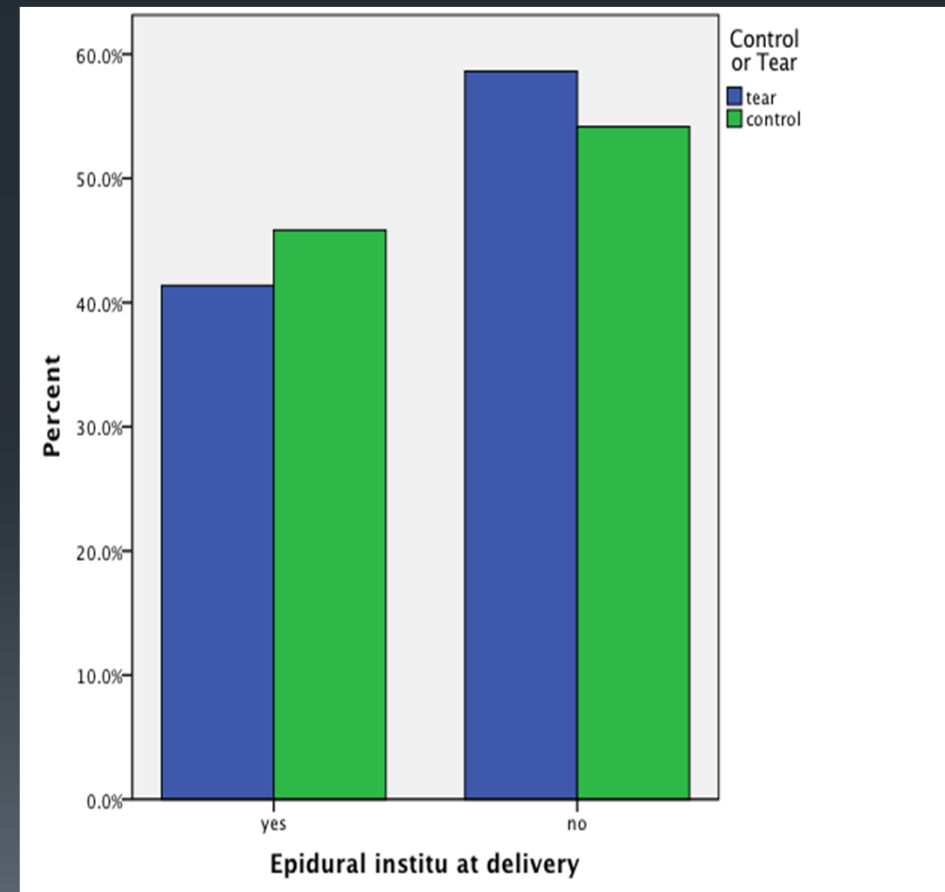
- No statistical difference
- **Guarding of perineum** more common in tears (88 % vs. 55%)
- **Hands of technique** more common in controls (26 % vs. 10%)

▪ ACCHOUCHEUR

- No statistical difference
- **Registrars & Midwives** most common acchoucheurs

Results (Birth Details)

- PRESENCE OF EPIDURAL
- No statistical difference





Results (Birth Details)

- **EPISIOTOMY**
- No statistical difference in –
 - Presence or absence of episiotomy (>60 % absent)
 - Indication for episiotomy
 - Who performed episiotomy
 - All at 8 O'clock (Controls Only)



Our Study (Birth Details)

- **DURATION OF 2ND STAGE**
- No statistical difference

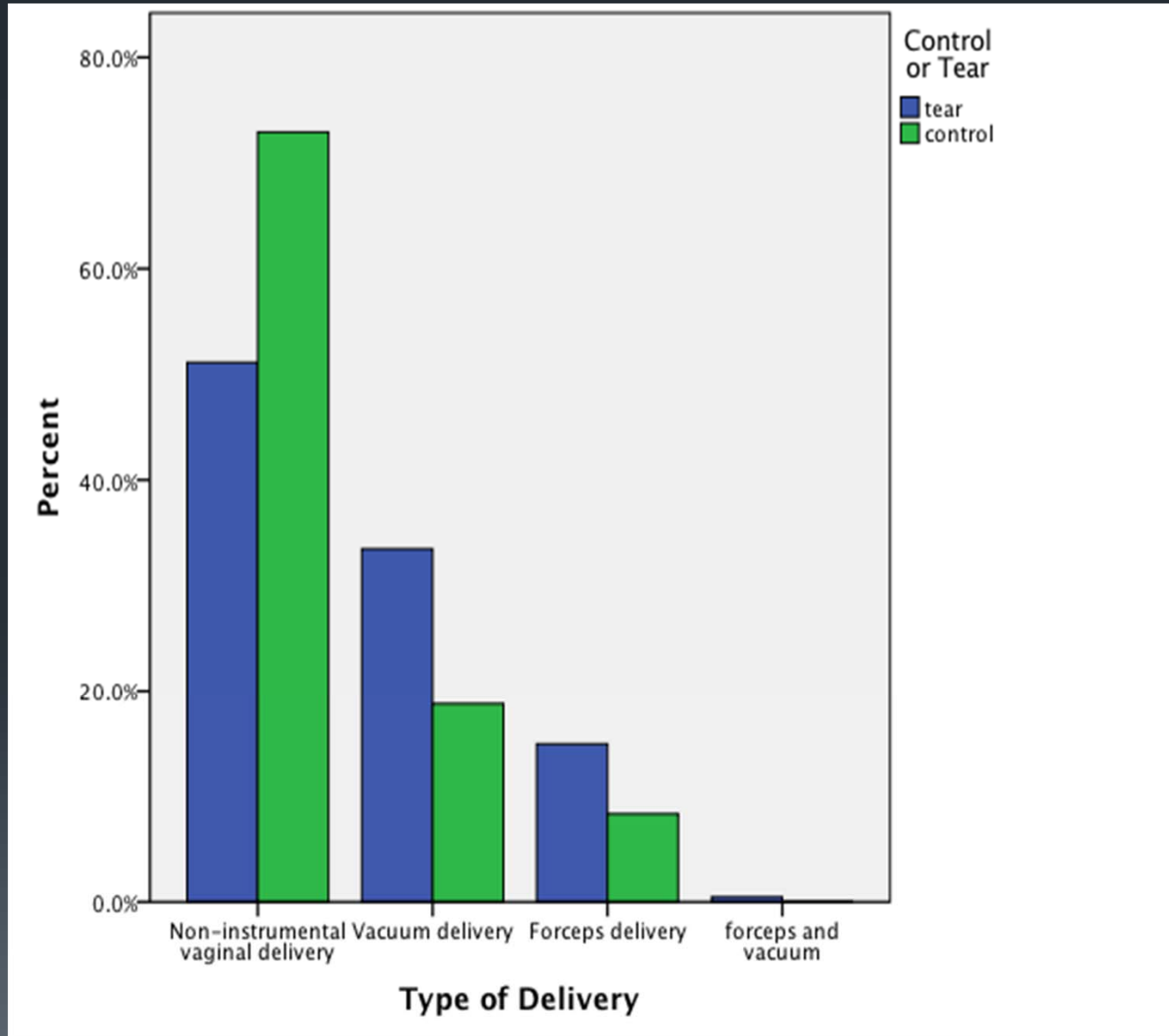
MEAN	TEAR	CONTROL
Duration of 2 nd Stage	82 minutes	79 minutes
Minutes of Pushing	62 minutes	55 minutes



Results (Birth Details)

- DELIVERY TYPE
- Significant different
- P value .009 (95 % CI .065 to .521)

	Control	Tear
SVD	72 %	51 %
Vacuum	18 %	34 %
Forceps	8 %	15 %





Results (Baby Details)

- **BIRTH WEIGHT**
- No statistical difference
- 26 tear (11%) and 4 control (2 %) patients with baby > 4000 g
- 2 tear and 1 control patients with baby > 4500 g



Results (Baby Details)

- **POSITION AT BIRTH**
- Significant difference P value .00 (95 %CI 1.07 to 1.19)

	Tear	Control
OA	121 (87.1 %)	46 (95.8%)
OP	17 (12.2%)	Nil
Other	1 (0.7%)	3 (4.2 %)



Results (Perineal Injury)

- **SPONTANEOUS TEAR**
 - Significant difference
 - Occurred in 79 % of tear and 65 % of control patients
 - P value .001 (95 % CI -.275 to -.008)
- **135 OASIS** repaired in DS & **86** in OT (1 missing data)



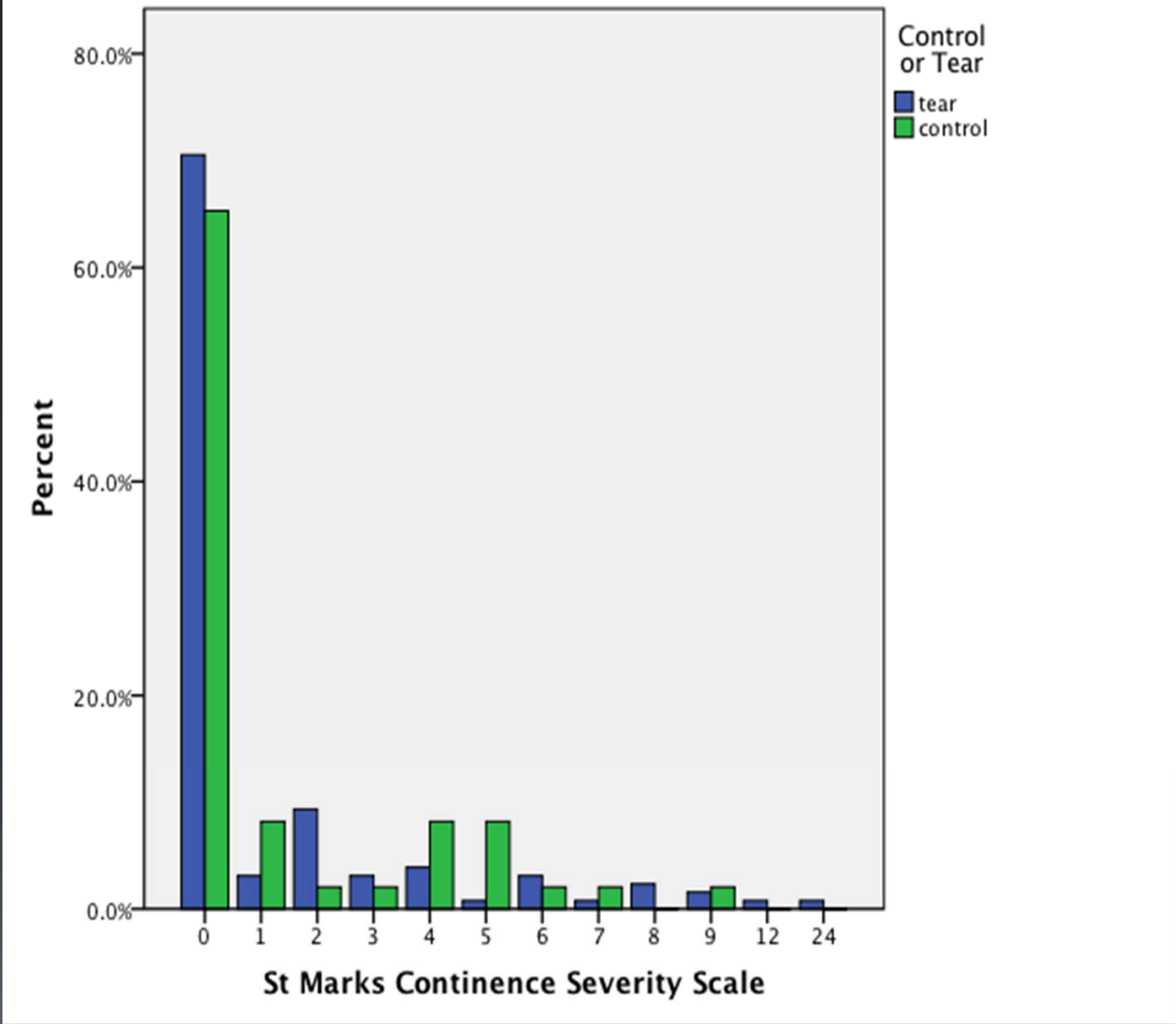
St. Marks Scale

- Patients consider how often the following impact them: **incontinence of flatus, liquid stool or solid stool, having to wear a pad, lifestyle modification**
- Asked about consumption of constipating medication
- Asked if they can't defer defecation for 15 mins
- Total score of **24** where
 - 0 to 6 – Mild
 - 7 to 12 – Moderate
 - > 12 – Severe



Results (Anal Incontinence)

- **ST. MARKS SCALE**
- No significant difference
- Mean score was 1.35 in tear and 1.37 in control patients
- Highest score was 24/24 in tear and 9/24 in control groups
- Median score 0 in both groups





Results (Urinary Incontinence)

- ICIQ
- No statistical difference between tear & control
- 73 % of tear and 67 % of control groups had a score of 0 at 6 weeks



Results (The Future)

- **BREAST FEEDING**
- No statistical difference
- Almost 80 % breastfeeding in both groups

- **RECOMMENCED INTERCOURSE**
- Statistical difference
- P Value .006 (95 % CI 0.028 to 0.322)
- Tear group less likely to have recommenced intercourse at 6 weeks
- No statistical difference with **DYSPAREUNIA & DRYNESS**



Results (The Future)

- **MORE CHILDREN**
- Significant Difference
- P .001 (95 % CF -0.280 to -0.305)
- 17 % of tear vs. 10 % of control patients said no to future pregnancies
- 2 % of tear vs. 11 % of control patients were undecided



Summary

- **SIGNIFICANT DIFFERENCE IN THE FOLLOWING VARIABLES**
- Racial background
- Delivery type
- Head position at birth
- Spontaneous tearing
- Impact on future sex life
- Impact on desire for future pregnancy



Continuing the Study

- Data collection ongoing
- Address limitations (e.g. data from one hospital, controls may not be representative, 6 week follow-up not always possible)
- To use these risk factors to modify the management of high risk patients in the future



Bibliography

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