

## RESIDENCY AND RISK OF OBSTETRIC ANAL SPHINCTER INJURY IN MIGRANT SOUTH ASIAN WOMEN

### Hypothesis / aims of study

Studies in Western countries have identified South Asian ethnicity as an independent risk factor for obstetric anal sphincter injury [1,2]. Differences in rates of injury between South Asian women and Caucasian women could be associated either with non-modifiable genetic factors, or with modifiable sociocultural factors. Some authors have suggested that differences in perineal anatomy might account for the increased risk [3]. Risks of many non-communicable diseases are observed to alter with migration from South Asia to Western countries. If sociocultural factors in the country of origin were the main determinants of increased risk, that risk should decrease following migration to Western countries. We therefore hypothesised that rate of injury would be negatively associated with length of residency in the UK, for migrant South Asian women delivering in the UK.

### Study design, materials and methods

Cross-sectional study of 4,696 singleton vaginal deliveries of women born in South Asia at one UK maternity unit between 2001 and 2009. Length of residency in the UK, vaginal parity, BMI, smoking status, marital status, simplified National Statistics Socio-Economic Classification, birthweight, maternal age, epidural analgesia, duration of 1st and 2nd stage of labour, syntocinon augmentation, medio-lateral episiotomy, method of delivery, and year of delivery were assessed in relation to risk of third or fourth degree perineal injury. Factors that were significantly associated with injury in univariate analysis ( $p<0.10$ ) were entered as potential risk factors in a multivariate logistic regression model. Backward stepwise elimination was used to select the final model, with likelihood ratio tests used to determine significance ( $p<0.05$ ). Data are presented as unadjusted and adjusted odds ratios (OR) with 95% confidence intervals (95%CI). Analyses were performed using SPSS v16.01.

### Results

In univariate analysis, length of residency in the UK was strongly negatively associated with risk of obstetric anal sphincter injury (OR 0.66 per five years of residency; 95%CI 0.55-0.80). Although adjusting for other significantly associated factors reduced the strength of this association, it was still narrowly significant (OR 0.84 per five years of residency; 95%CI 0.72-0.99). The final multivariate model is presented in the table below:

Risk factor for obstetric anal sphincter injury	Adjusted OR	95%CI	p
Vaginal Parity / delivery	0.24	0.16-0.35	<0.0001
Birthweight / 500g	1.80	1.49-2.18	<0.0001
Ventouse delivery (n=528)*	2.18	1.33-3.57	0.002
Forceps delivery (n=235)*	5.87	3.20-10.8	<0.0001
Episiotomy (n=1057)**	0.22	0.13-0.36	<0.0001
Length of residency / five years	0.84	0.72-0.99	0.04

\*reference group: Spontaneous vaginal delivery (n=3,912)

\*\*reference group: No episiotomy (n=3,618)

The number needed to treat with mediolateral episiotomy at forceps delivery was 1.88, and at ventouse delivery was 10.0.

### Interpretation of results

In South Asian women migrating to the UK, length of residency in the UK is independently negatively associated with risk of obstetric anal sphincter injury. Most of the reduction in risk over time is however adequately accounted for by other recognised associations of injury, including parity. These data suggest that the increased risk of injury compared to the Caucasian population in the UK is mainly due to genetic differences, rather than modifiable sociocultural factors. Obstetricians should take account of the increased risk in South Asian women when making decisions about method of delivery. These data suggest that episiotomy should be used routinely at instrumental deliveries.

### Concluding message

The increased risk of obstetric anal sphincter injury in South Asian women is most likely accounted for by genetic factors.

### References

- Acta Obstet Gynecol Scand. 2008;87(5):564-73
- Am J Obstet Gynecol. 2003 Apr;188(4):1063-7
- Am J Obstet Gynecol. 2005 Aug;193(2):455-9

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<b>What were the subjects in the study?</b>	HUMAN
<b>Was this study approved by an ethics committee?</b>	No
<b>This study did not require ethics committee approval because</b>	Anonymous extract of a pre-existing approved clinical database.
<b>Was the Declaration of Helsinki followed?</b>	Yes
<b>Was informed consent obtained from the patients?</b>	No