

A RETROSPECTIVE STUDY OF OBSTETRIC ANAL SPHINCTER INJURY (OASIS): RISK FACTORS, INCIDENCE AND MANAGEMENT

Hypothesis / aims of study

OASIS are a complication of labour that can lead to morbidity of the pelvic floor, and significantly affect quality of life. Various studies have observed the risk and protective factors for OASIS, however not all associations have been reproducible. The incidence of OASIS has also been increasing over recent years. (1) This study aims to evaluate the demographic and obstetric risk factors for OASIS, including those which are not currently documented, and to audit against the standards set out by national guidelines with regards to incidence and compliance of management. (2) It will also document the time trend in the incidence, management and risk factors for OASIS over a 10 year period.

Study design, materials and methods

Data were collected via our K2 electronic Maternity Record for the years 2001-2011. This was analysed to estimate the incidence of OASIS each year, compliance with suture material against guideline recommendations, proportion repaired by different grades of operator, and prescribed analgesia and antibiotics post-operatively. Trends were observed using scatter plots and trend lines for all women who delivered vaginally. All women who sustained OASIS in this period were assigned to the case group. In order to evaluate the potential role of other factors, for the incidence of OASIS, we undertook a case-control analysis. A control group was created with women from the same database, who did not sustain OASIS, during the same study period. This was matched with the OASIS group for age, parity, mode of delivery and gestational age. A total of 2450 women were studied; 1225 in the case and 1225 in the control group. Further data analysis was by SPSS, initially by descriptive statistics for the comparison of controlled variables to confirm similarities. The distributions of continuous variables (birth weight, head circumference and duration of active second stage of labour) were explored and then analysed by Mann-Whitney U tests, as outliers were deemed important to associations. Categorical and ordinal variables (smoking, epidural use, and patient's ethnicity) were analysed using Chi-squared testing for associations, and then Phi and Cramer's V for the strength of this association and correlation between case and control groups.

Results

The overall incidence of OASIS was 3.6% over the time period studied and peaked at 6.2% in 2011. The majority of OASIS were repaired using the recommended suture material (92.7%) and by Registrars or Consultants (92.5%). Both factors were consistent over time. Postoperatively, 61% were prescribed antibiotics over this time period and 60% analgesia; these figures have been consistent over time.

Figure 1 shows the change in factors, which have been positively associated with OASIS, for all vaginal deliveries in the same study period. The rate of instrumental delivery has increased over time and epidural use has declined. Mean birth weight also increased until 2006 and has remained steady in the later period of this study.

The mean age was 29.7 years, median parity 0 (i.e. most women were nulliparous) and the majority of deliveries were at term for case and control groups. The case group had a significantly higher birth weight ($U = 819158.5$, $z = 3.93$, $p < 0.0005$). There were significantly more Asian women in the case group ($\chi^2 (1) = 40.825$, $\psi = 0.129$, $p < 0.0005$). There was no significant difference between head circumference, epidural use or smoking habits. However, a non-significant negative correlation was seen with smoking ($\psi = -0.029$, $p = 0.15$).

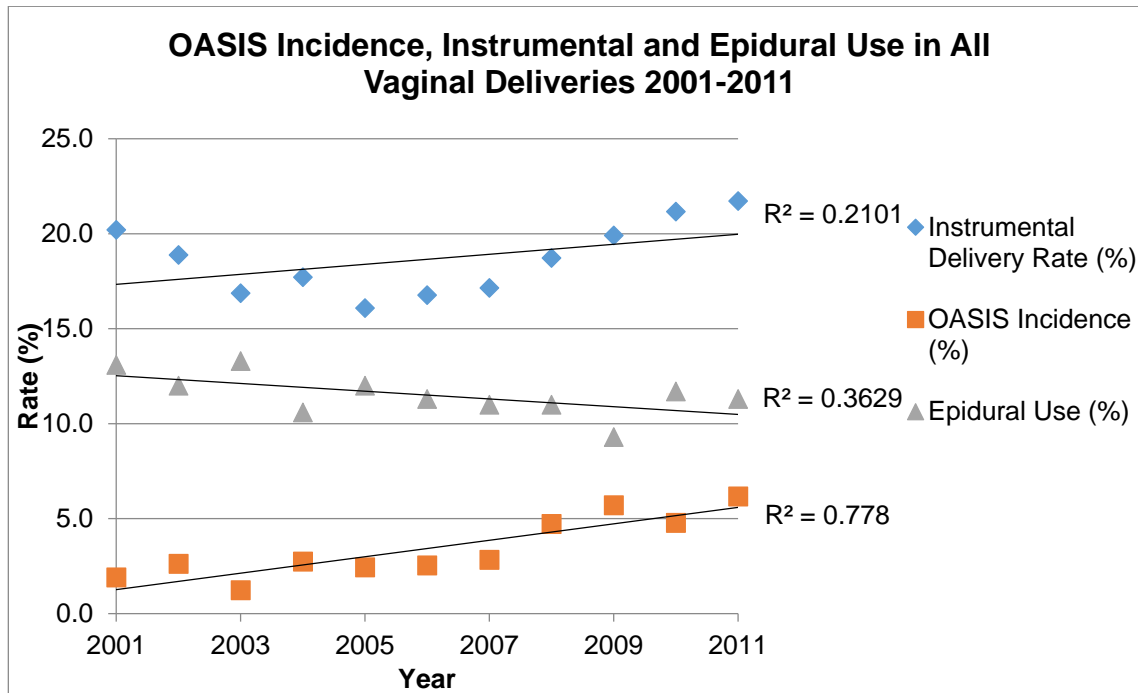


Figure 1: OASIS Incidence, Instrumental and Epidural Use in All Vaginal Deliveries 2001-2011

Interpretation of results

A consistently increasing trend in the incidence of OASIS was observed, which was higher than expected. This may be related to the increased rate of instrumental deliveries and higher birth weight. Intraoperative management was compliant with national guidelines; however there was lower compliance to postoperative management recommendations. This may be due to the transfer of notarised information into an electronic database resulting in incomplete records.

In line with other epidemiological studies, statistically significant associations have been found between the association of birth weight and Asian ethnicity with OASIS. A non-significant negative correlation with smoking may indicate that smokers are less likely to sustain OASIS.

Concluding message

The recent increase in the incidence of OASIS may be partly due to increased awareness; aided by the introduction of formal classification system in 2007. The changing trends in factors associated with OASIS, such as birth weight and instrumental delivery, over the study period may have also resulted in the increasing incidence. Postoperative management of OASIS may be improved by formal education on management and implementing local protocol. Our findings may propagate further prospective studies on postoperative complications, such as wound infection, dehiscence and decline in pelvic floor function.

Birth weight and Asian ethnicity are important risk factors for OASIS. The non-significant relationship which we found between smoking and OASIS is consistent with previous reports.

References

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Disclosures

Funding: No funding required **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** Retrospective study from existing database. This was an approved audit by St George's NHS Healthcare Trust. Audit dbs registration no. 3438 **Helsinki not Req'd:** no identifiable information was used. This study only required the use of already existent data from the electronic Maternity Record. **Informed Consent:** No