

Relationship between birth position and perineal trauma

Dr Margaret Barnes, Senior Lecturer
Queensland University of Technology, Brisbane,
Queensland

Ms Barbara Soong
Clinical Midwifery Consultant
Mater Mothers Hospital, Brisbane

Aim

- To describe the relationship between birth position and patterns of perineal trauma among women who have a spontaneous vaginal birth.
- The setting was a large tertiary referral maternity hospital in Queensland. Data were collected from 1st June 1999 to 31st March 2001

Background

- Trauma to the genital tract is a significant health issue leading to both short term and long term morbidity .
- Most childbearing women sustain significant trauma with a higher rate observed amongst first births and assisted birth.
- Studies have considered birth position and other variables related to trauma, however, inconsistencies in definitions have made it difficult to interpret results. A systemic review of the evidence in relation to position concluded that the current evidence is inconclusive (Renfrew et al 1998)

Method

- The research design was a prospective cohort study.
- Women who had a spontaneous vaginal birth with an endorsed midwife or student midwife as accoucheur were included. Multiple birth and malpresentation were excluded.
- Data were prospectively collected from the sample of 4,078 women who were eligible to be included in the study. Of this number, 3,756 complete data sets were used for the analysis.
- Ethical approval was obtained from the Mater Misericordiae Hospitals Human Research and Ethic Committee.

Data Collection

- A data collection tool was developed to include:
 - demographic information
 - parity
 - analgesia usage
 - maternal birth position
 - perineal trauma
 - blood loss
 - baby weight and apgar scores

Birth Position

- The categories of 'birth position' included on the data collection form were developed based on the literature and clinical experience.
- Positions recorded included:
 - Semi-recumbent
 - On all fours
 - Kneeling
 - Lateral
 - Lithotomy
 - Supine
 - Sitting
 - Squatting
 - Standing

Definition of perineal trauma

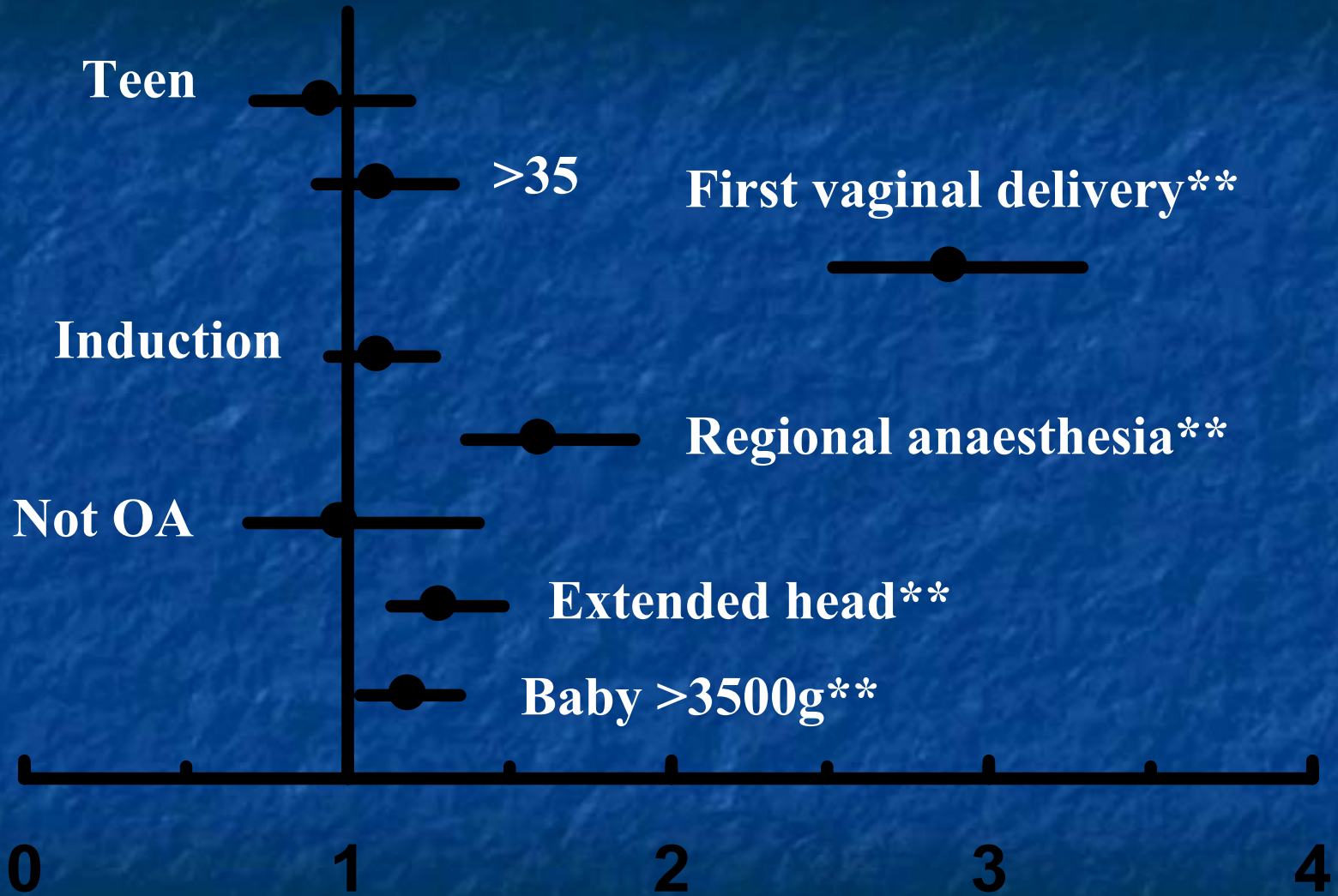
- For the purposes of this study, perineal trauma was defined as any trauma which required suturing.
- Therefore, tears not requiring suturing were not included.
- Episiotomy was included as a category of perineal trauma.

Analysis

- Odds Ratio and 95% confidence limits
 - Relationship between perineal trauma and birth position
 - Relationship between perineal trauma and birth factors

Major factors

Parameter	Total	sutured (%)
Total	3756	1679 (44.5)
■ Adolescent	252	107 (42.5)
■ >35 years	479	266(44.6)
■ First vag del	1472	885 (60.1)**
■ Induced	956	443 (46.3)
■ Regional Anaes.	826	444 (53.8)**
■ Not OA	131	58 (44.3)
■ Extended head	1481	717 (48.4)**
■ Baby>3500g	1861	868 (46.6)**



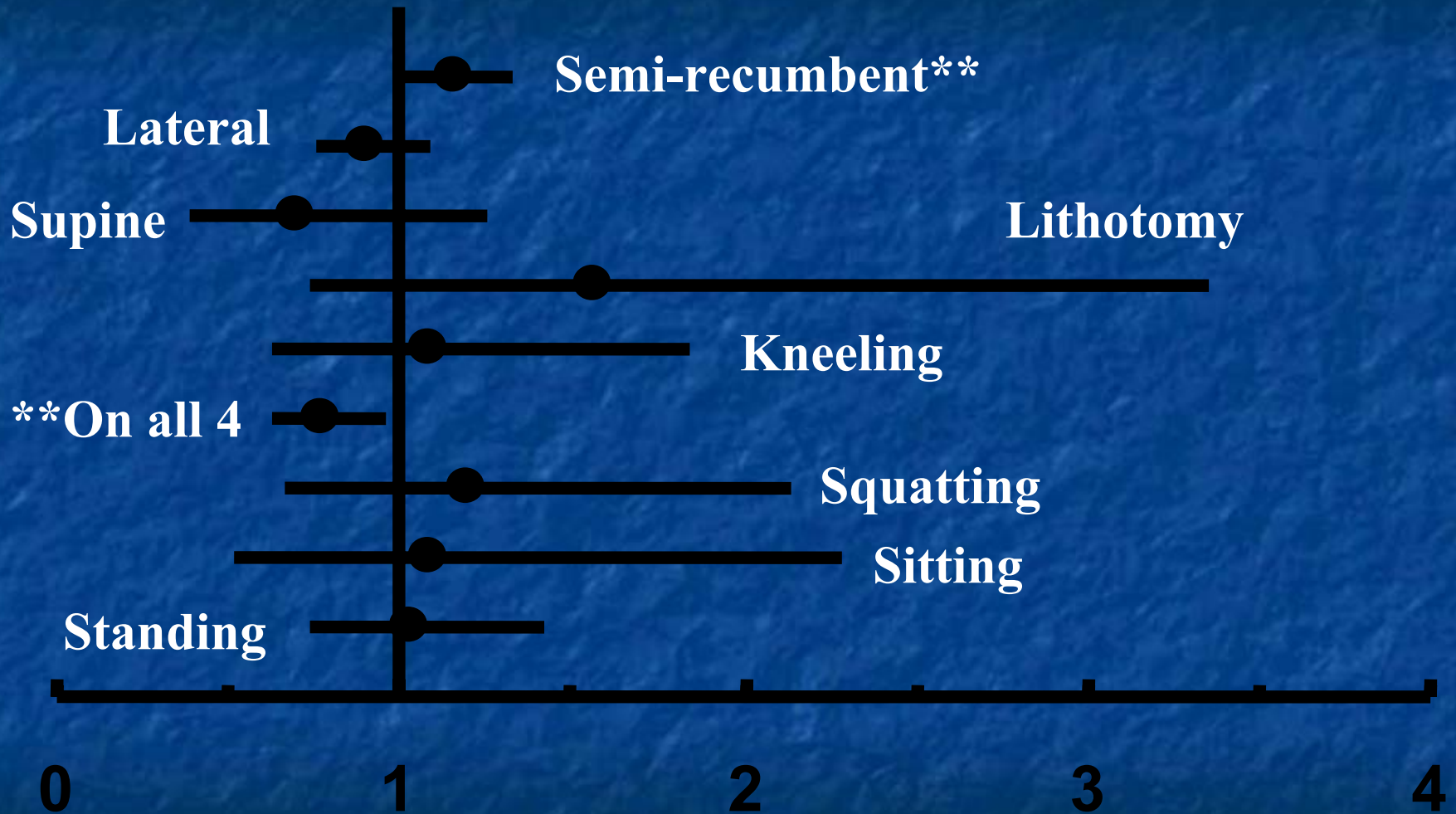
Odds Ratio and 95% Confidence Intervals

**** statistically significant**

Position of delivery (all cases)

Position	Total	sutured (%)
■ All	3756	1679 (44.5)
■ Semi-recumbent	2476	1132 (45.7)*
■ Lateral	550	232 (44.2)
■ Supine	50	18 (36.0)
■ Lithotomy	27	15 (55.6)
■ Kneeling	54	25 (46.3)
■ On all fours	371	144 (38.8)*
■ Squatting	47	23 (48.9)
■ Sitting	28	13 (46.4)
■ Standing	153	69 (45.1)

All cases



Odds Ratio and 95% Confidence Intervals

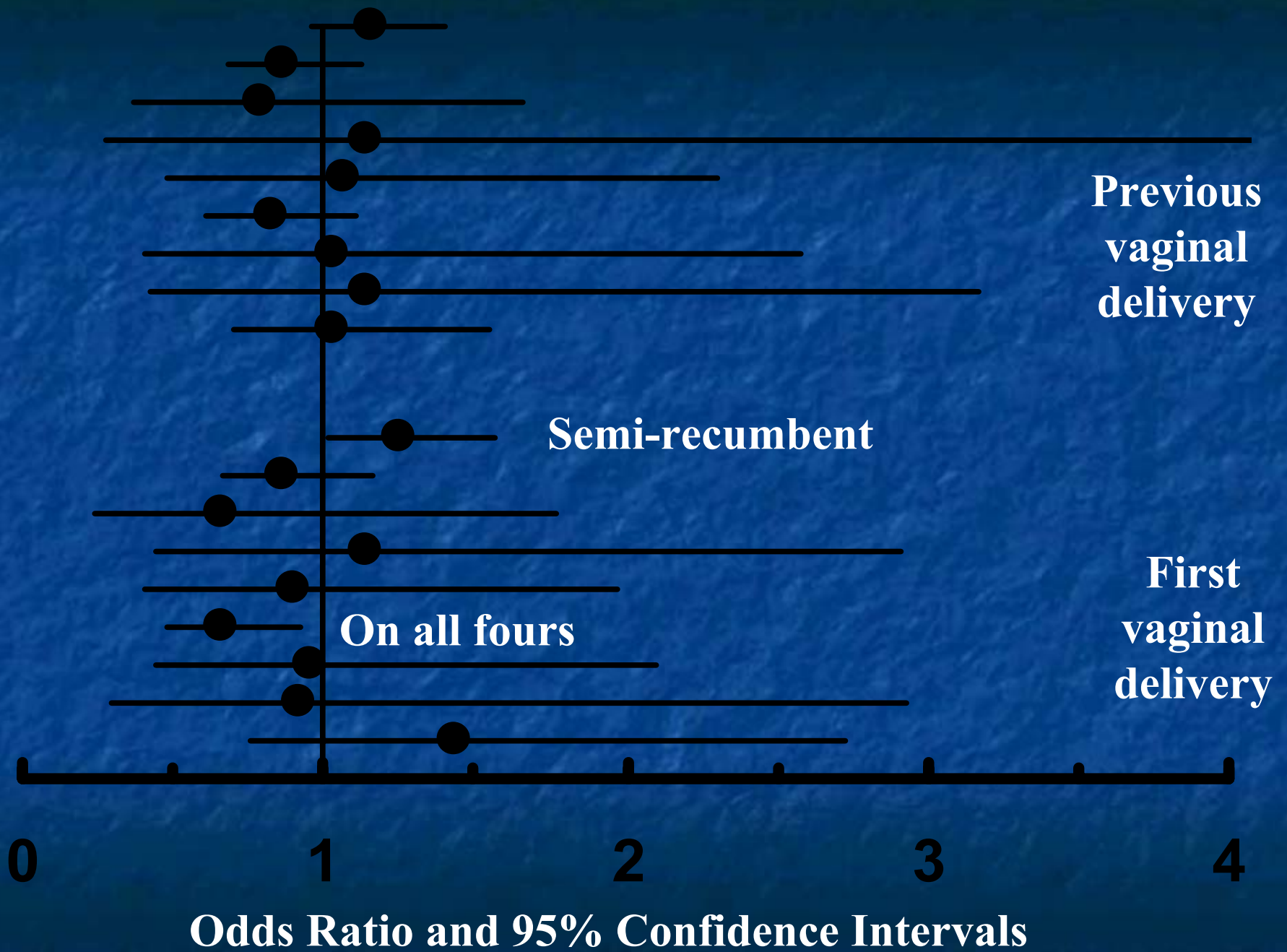
** statistically significant

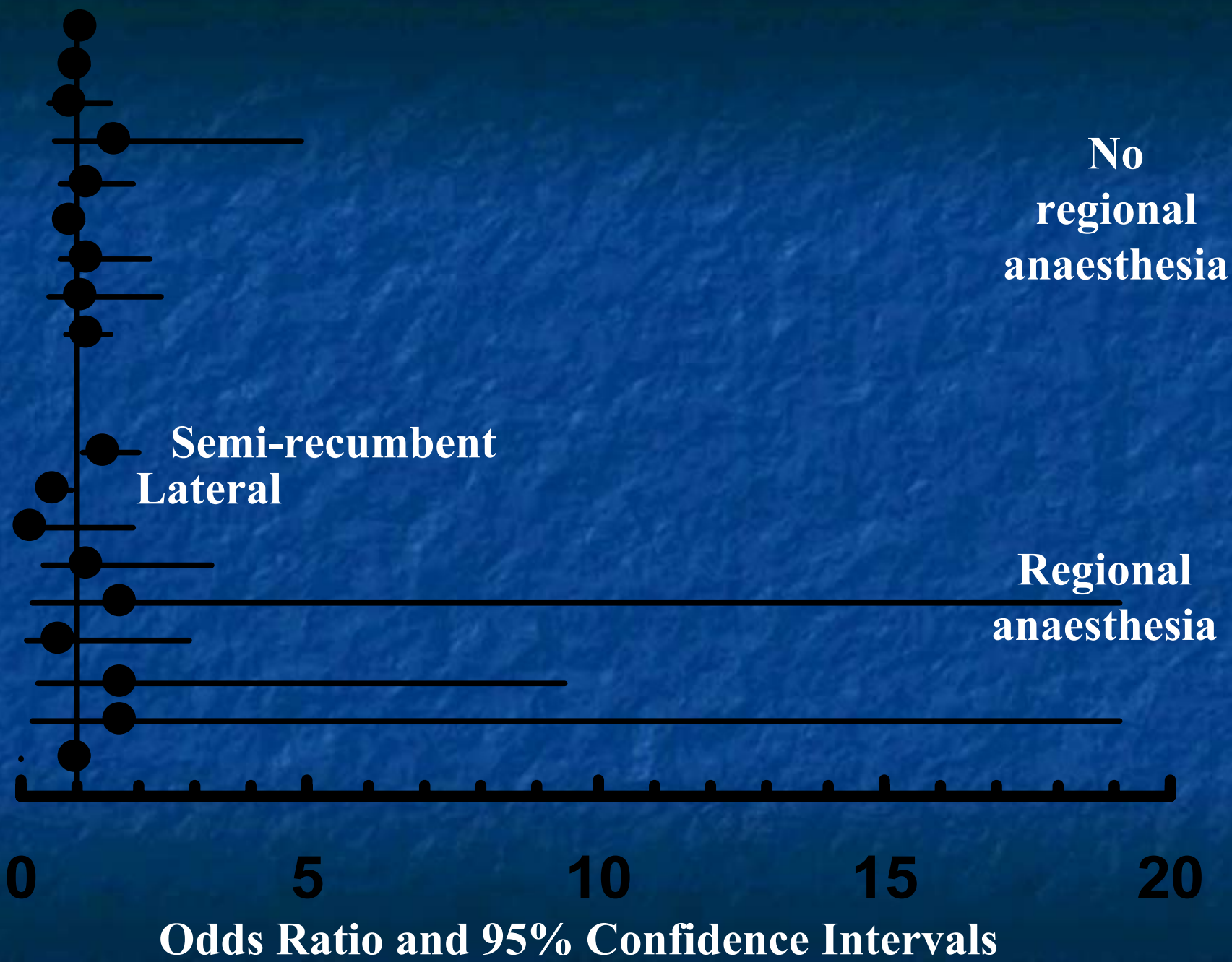
Discussion

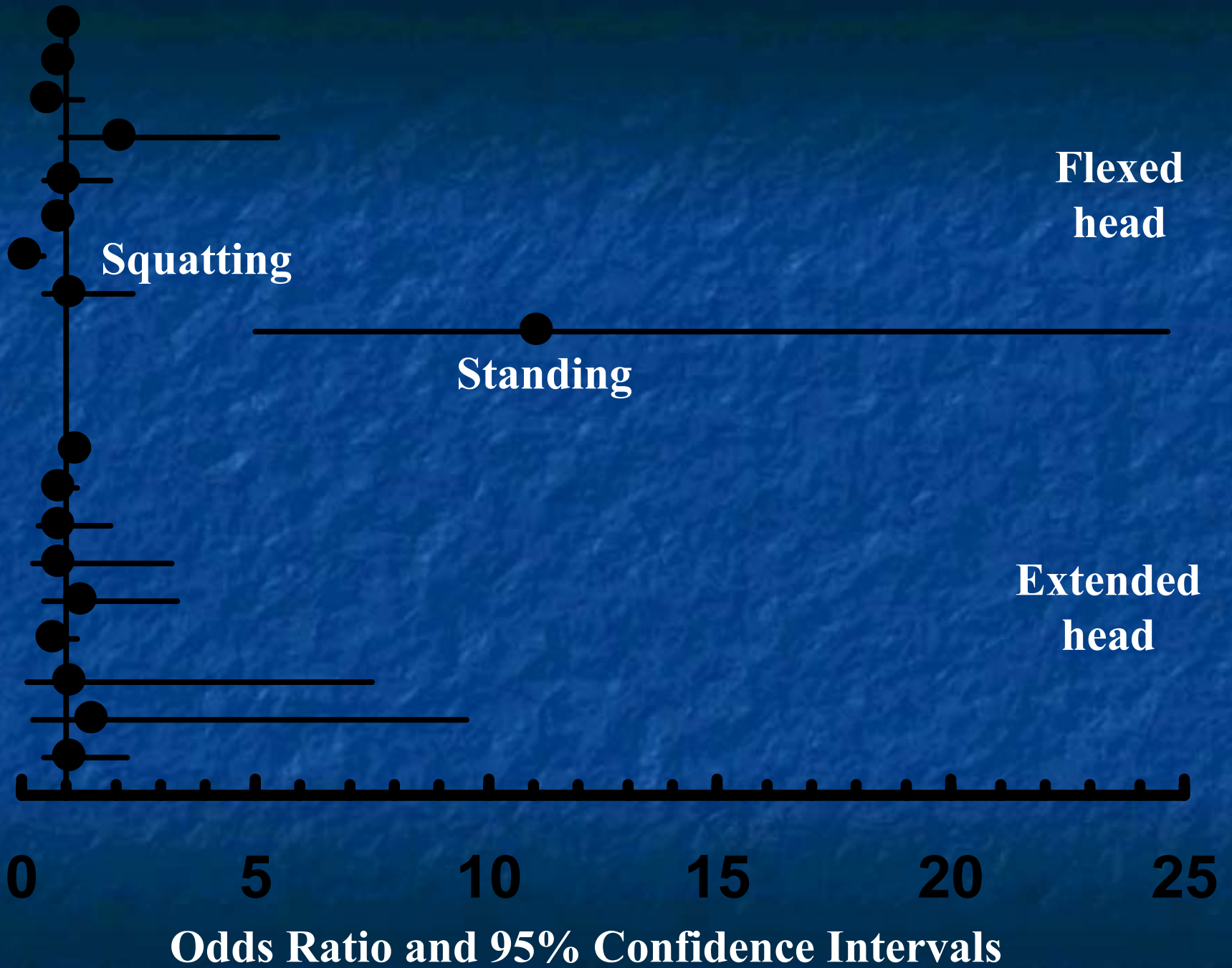
- First vaginal birth, regional anaesthesia, deflexed head and larger babies are associated with the need for sutures.
- For delivery positions
 - Semi-recumbent position is associated with need for sutures
 - On all fours associated with a reduction in the need for sutures
 - Some of the positions have too few cases for statistical comparison

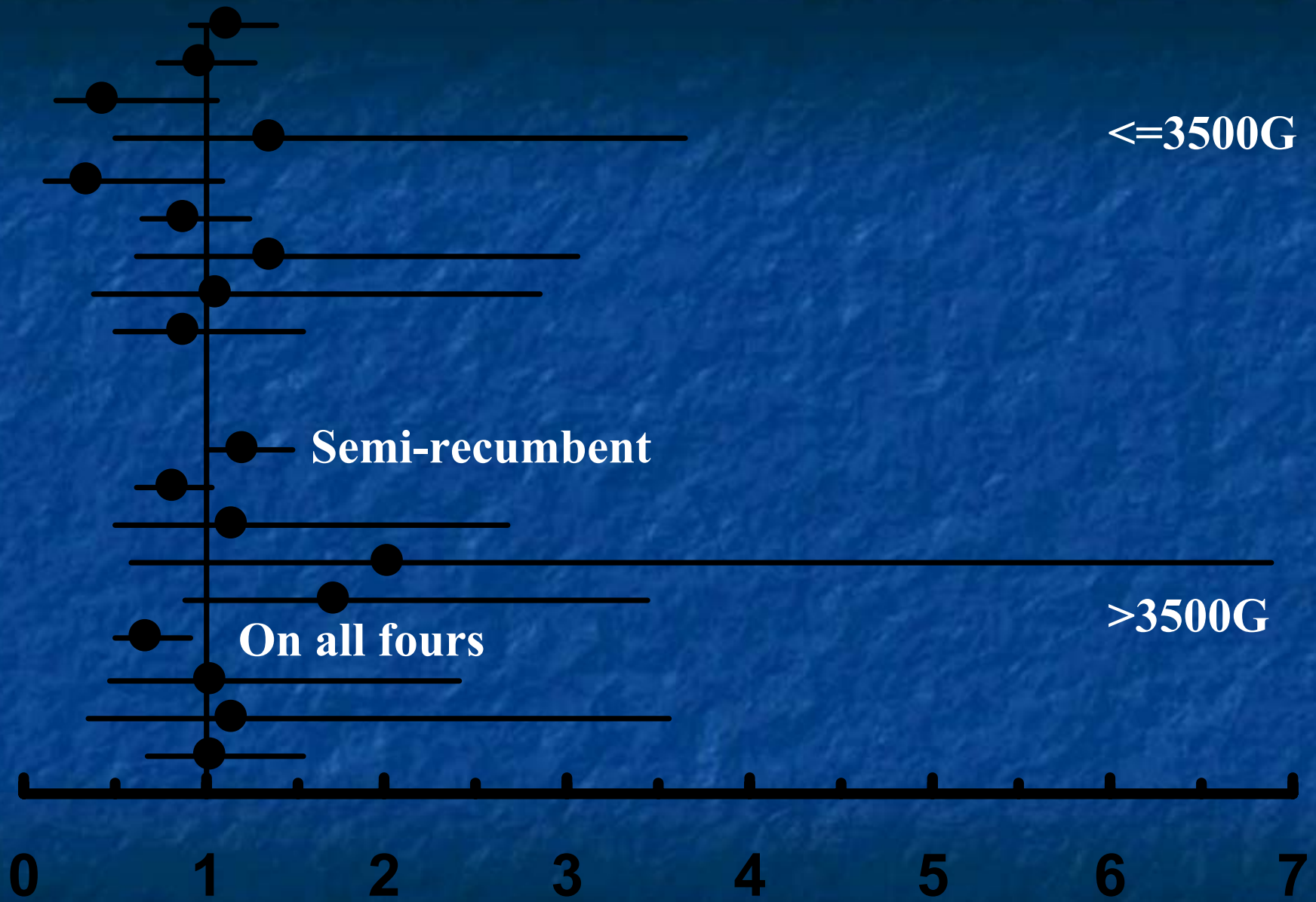
Subgroup analysis

- To determine whether positions matter more or less in vulnerable groups.
- Parameters tested are those associated with sutures
 - First vaginal delivery
 - Regional anaesthesia
 - Deflexed head
 - Baby > 3500g









Odds Ratio and 95% Confidence Intervals

Discussion

- The associations between semi-recumbent position and sutures, and between on all fours position and no sutures are more marked in first vaginal deliveries and when babies are more than 3500g
- When regional anaesthesia is used, semi-recumbent position is associated with a need for suturing, and lateral position associated with a reduced need for suturing
- When the head is flexed, delivering standing is associated with need for sutures, and squatting with not needing sutures

Limitations

- The numbers in different delivery positions are disparate, and this has two implications:
 - The positions were not randomly assigned, so that there may be an association between positions and other factors that may affect the status of the perineum
 - A lack of statistical significance cannot be taken as indicative of no difference, it may be because the numbers are too few and the statistics not powerful enough to detect the difference.

Implications for midwifery practice

- Contributes to midwifery knowledge generally
- May influence practice in relation to mobility and position in labor generally
- Provides additional evidence to inform women of choices
- Clinical history indicating past perineal trauma, may influence management.