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To study indications of primary lower segment caesarean section (LSCS) in primigravida and multigravida: A retrospective 51-month (6 years and 3 months) study

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Abstract

Objective: This study aims to analyze the indications of primary lower segment caesarean section (LSCS) in primigravida and multigravida patients over a six year and three months period.

Methods: A retrospective analysis of primary LSCS cases was conducted in District Hospital Jalandhar (Pb) from January 2018 to March 2024. Data were collected from medical records, including demographic details, obstetric history, and specific indications for LSCS. Statistical analysis was performed to identify patterns and significant differences between the two groups.

Results: Out of 13,991 deliveries during the study period, 3,856 primary LSCS cases were identified (27.2%). Among these, 2,558 (65.3%) occurred in primigravida and 1,298 (34.7%) in multigravida. The most common indications in primigravida were non-progress of labor (30%), fetal distress (25%), and cephalopelvic disproportion (20%). In multigravida, common indications included previous uterine surgery with obstetric complications (40%), fetal distress (20%), and malpresentation (15%). A significant association was found between maternal age, parity, and indications for LSCS ($p < 0.05$).

Conclusion: The study highlights distinct patterns in indications for primary LSCS between primigravida and multigravida patients. Tailored obstetric care is crucial to address these differences and potentially reduce the rate of primary LSCS.

Keywords: Primary LSCS, indications, primigravida, multigravida, retrospective study

Introduction

The global rise in caesarean section rates is a major public health concern, as it has profound implications for maternal and neonatal outcomes. Caesarean delivery, while lifesaving in certain situations, can lead to increased risks of maternal morbidity, future obstetric complications, and healthcare costs. Primary lower segment caesarean section (LSCS) refers to the first caesarean delivery performed on a patient, and understanding its indications is critical for designing strategies to reduce unnecessary procedures. Analyzing the distinct indications for primary LSCS in primigravida and multigravida women can help optimize clinical decision-making and resource allocation. With advancements in obstetric care and evolving population demographics, evaluating these indications over time provides valuable insights into clinical practices and maternal health outcomes. This study aims to evaluate the primary indications for LSCS in these groups, providing insights into improving obstetric care.

Materials and Methods

Study Design and Setting: A retrospective observational study was conducted at a District hospital Jalandhar over a period of six years and three months (January 2018 to March 2024).

Inclusion Criteria

- All cases of primary LSCS performed during the study period.
- Documented indications for surgery.

Exclusion Criteria

- Repeat caesarean sections.
- Incomplete medical records.

Data Collection

Data were extracted from hospital medical records and included:

- Demographic details (age, parity, socioeconomic status).
- Obstetric history.
- Indications for LSCS.

Statistical Analysis: Data were analyzed using SPSS Version

29. Descriptive statistics were used for demographic variables. Chi-square tests and logistic regression analyses were performed to identify associations between indications and maternal characteristics. A p-value of <0.05 was considered statistically significant.

Results

Table 1: Demographic Characteristics

Parameter	Primigravida (n=2558)	Multigravida (n=1298)	Total (n=3856)
Mean Age (Years)	25.3±4.1	28.5±4.8	26.4±4.2
Rural Residence (%)	65%	55%	61%
Socioeconomic Status	Low: 50%, Medium: 40%, High: 10%	Low: 45%, Medium: 45%, High: 10%	Low: 48%, Medium: 42%, High: 10%

Table 1 highlights the demographic distribution, showing a younger mean age for primigravida compared to multigravida.

Table 2: Distribution of Indications for LSCS

Indication	Primigravida (n=2558)	Multigravida (n=1298)	Total (n=3856)
Non-progress of labor	760 (29%)	120 (10%)	880 (22.9%)
Fetal distress	650 (24%)	238 (20%)	898 (23.2%)
Cephalopelvic disproportion	440 (19%)	90 (7.5%)	530 (15.6%)
Previous uterine surgery	8 (3%)	480 (40%)	488 (14.1%)
Malpresentation	270 (10%)	180 (15%)	450 (11.8%)
Placenta previa/accreta	110 (5%)	120 (10%)	230 (6.8%)
Others	320 (10%)	70 (5.8%)	390 (8.5%)

Table 2 lists the primary indications for LSCS, with non-progress of labor and fetal distress being predominant in primigravida, while previous uterine surgery was the leading cause in multigravida.

Table 3: Age Distribution and LSCS Indications

Age Group (years)	Primigravida	Multigravida	Total
<20	208 (7%)	8(0.8%)	216
20-25	1300 (55%)	200 (16.7%)	1500
26-30	850 (32%)	600 (50%)	1450
>30	200 (6%)	490 (32.5%)	690

Table 3 details age-specific trends, demonstrating a higher proportion of LSCS in older multigravida women.

Table 4: Geographical Distribution of Patients

Region	Primigravida	Multigravida	Total
Rural	1609(65%)	760 (55%)	2369
Urban	949 (35%)	538 (45%)	1487

Table 4 compares rural and urban distribution, showing higher LSCS rates in rural residents.

Table 5: Maternal Outcomes Following LSCS

Outcome	Primigravida (n=2558)	Multigravida (n=1298)	Total (n=3856)
Postoperative fever (%)	10%	8%	9.4%
Wound infection (%)	5%	4%	4.7%
Prolonged hospital stay (%)	15%	10%	13.2%

Table 5 outlines maternal outcomes, with prolonged hospital stays being more common in primigravida.

Discussion

This study provides critical insights into the indications for primary LSCS in primigravida and multigravida patients, emphasizing distinct patterns that inform obstetric management.

Non-progress of labor and fetal distress were the most common reasons for LSCS in primigravida patients, consistent with findings by Betrán AP *et al*, who reported similar global trends. The significant role of prior uterine surgeries in multigravida aligns with Villar J *et al*, who highlighted the impact of prior caesarean deliveries and uterine surgeries on subsequent pregnancies.

The higher incidence of LSCS in rural populations may reflect disparities in access to antenatal care and emergency obstetric services, as noted by Hamilton BE *et al*. Age-specific differences, particularly the increased rate of LSCS among older multigravida women, align with studies by Gibbons L *et al*., suggesting that advanced maternal age is a significant risk factor for obstetric complications.

Moreover, the maternal outcomes reported in this study, including postoperative fever and prolonged hospital stays, mirror those observed in similar research conducted by Lumbiganon P *et al*. These findings highlight the need for individualized care plans to address specific risks in both primigravida and multigravida populations, particularly in resource-limited settings.

This discussion underscores the complexity of obstetric care and the multifactorial considerations that influence the decision for LSCS. Collaborative efforts between healthcare providers, policymakers, and researchers are essential to optimize maternal and neonatal outcomes and to reduce unnecessary caesarean deliveries.

Limitations and Conclusion

The retrospective nature of this study limits causal inferences. Data from a single center may not generalize to other settings. Future multicentric studies are warranted. The study underscores the need for targeted interventions to address primary LSCS indications, particularly in high-risk groups. Further research is needed to explore strategies for optimizing obstetric outcomes.

Conflict of Interest

Not available

Financial Support

Not available

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