



ORIGINAL ARTICLE

Comparison of the rate and indications of caesarean section in primigravida and multigravida in a maternity hospital of Pakistan.

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ABSTRACT... Objective: To compare the causes and rate of caesarean section in primigravida and multigravida. **Study Design:** Cross-sectional study. **Setting:** Government Maternity Hospital, Peshawar. **Period:** January 2021 to January 2022. **Methods:** The study included all primigravida with 37-42 weeks period of gestation, and multigravida (gravida 2-12) with the same gestational period. Similarly, all the multigravida who delivered previously by C-section or had normal vaginal delivery with the viable fetus and currently delivered by C-section, were also included. Cases having history of ruptured uterus, nonviable pregnancy and ectopic pregnancy were excluded from the study. **Results:** Overall, the frequency of C-sections in the present study was 30% in primigravida and 70% in multigravida. Majority of the patients (65%) went through elective C-sections while 35% delivered through emergency C-sections, difference between the two is statistically significant (p -value <0.0001). The commonest cause for performing elective C-sections was previous C-sections. Fetal distress was the commonest indication 27.27% for emergency C-sections. Most of the C-sections performed in primigravida were because of fetal distress 23.3% while previous C-sections were the topmost cause in multigravida. Maternal wish is another new indication that accounted for 7.6% of C-sections. **Conclusion:** The results showed that the incidence of C-sections was higher in multigravida than primigravida. Similarly, the rate of elective C-sections was more than emergency ones. Maternal wish is another rising new indication for C-sections.

Key words: Caesarean Section, Multigravida, Primigravida, Vaginal Delivery.

INTRODUCTION

Caesarean delivery is a surgical procedure through which a fetus is delivered after the period of viability by giving an incision in the uterus.¹ It gained admiration in later part of the nineteenth century as a part of obstetric care and the only purpose is to lessen fetomaternal illness and death which was very high earlier because of; deliveries done by unskilled attendants especially at home, difficult delivery in cases of obstructed labour, application of high forceps leading to profound injuries of pelvic and perineal areas, and complications especially after interventional procedures due to restricted supply and spectrum of antibiotics.²⁻³ There are four main indications for more than 85% of CS performed; 44% CS are due to previous scars (CS), difficult or obstructed labour (10%), conditions leading to compromise the fetal health (10%) and atypical presentation

of the fetus (3%). A new indication on the rise in caesarean section is maternal request which accounts for 1-7%.⁴

Among surgical procedures, CS is one of the most commonly performed procedures not only in Pakistan but worldwide, and can be reviving for the newborn, the mother, and sometimes both. The continuously rising rates of CS have been the topic of concern due to increased prevalence recently. The incidence of CS is increased twice or thrice in the last 15 years all over the globe. In 2007-2008, 110,000 births were reviewed by WHO from nine countries in Asia and stated that 27% of births were delivered by CS. Several different factors have caused an increased rate of CS like precious pregnancy, maternal obesity, maternal request, handled cases by unskilled or unqualified staff especially in

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rural areas, mother related complications like cardiovascular diseases, kidney diseases, other medical illnesses and fright of litigation etc.⁵

CS though a life-saving procedure but increases short and long term health risks for both mother and infant, possibly affecting the progress and outcome of the next pregnancies. The chief obstetric problems related with CS comprise maternal death, occurrence of postpartum infection, rupture of uterus, injury to bladder, atypical placentation, stillbirth, preterm birth, and others. Moreover, there are also evidences which suggest that CS affects the hormonal and micro-biological physiology, compromising gut flora.⁶ Therefore, this study was designed to compare the indications and frequency of elective and emergency CS; and also the comparison of causes and rates in primigravida and multigravida so that the factors which need due consideration in any group may be identified and improved management could be given to them for reducing caesarean deliveries. This information is essential for informing health authorities and provides a reference line for upcoming strategies against this speedily growing issue.

METHODS

A record based study was performed at Government Maternity Hospital, Peshawar, from January 2021 to January 2022 after ethical approval (RMJ/RMI-REC/Approva/162-24-10-22). The hospital is responsible for providing health care services to both booked and unbooked patients of urban and rural areas in the vicinity of Peshawar. Every year around 4500-5000 deliveries were conducted in the said hospital. This study included 603 women, who underwent CS. Rate and indication(s) of CS were noted and compared in both primigravida and multigravida. The study included all primigravida with 37-42 weeks period of gestation, and multigravida (gravida 2-12) with the same gestational period. Similarly, all the multigravida (gravida 2-12) who delivered previously by C-section or had normal vaginal delivery with the viable fetus and currently delivered by C-section, were also included. Woman with non-viable pregnancies; history of ruptured uterus and with ectopic pregnancy were

excluded from the study.

Normal labor register, which comprises detailed data of almost every CS and normal vaginal delivery performed in the Maternity Hospital, was used to ascertain the number of CS during the study period. Confidentiality of the patients was strictly maintained.⁷⁻¹⁰

Data Analysis and Interpretations

SPSS version 20 was used for statistical analysis. Separate calculations were made for primigravida and multigravida; and elective and emergency CS. Data was expressed in percentage. One way ANOVA and chi-square test was used for statistical analysis. P-value <0.05 was considered as statistically significant.

RESULTS

Primigravida versus Multigravida

The overall incidence rate of CS in this study was 30% in primigravida and 70% in multigravida, using Chi-square test we got p-value <0.0001 which is statistically significant (Figure-1).

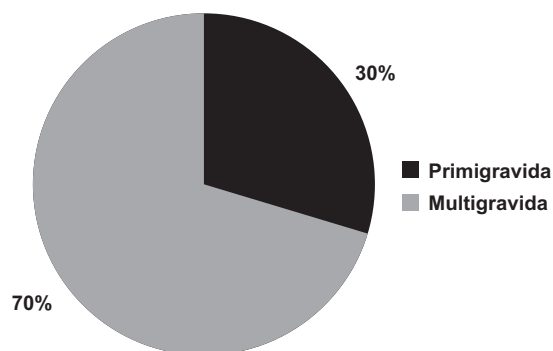


Figure-1. Percentage of C-section in primigravida and multigravida

Elective Versus Emergency C-section

Majority of the patients gone through elective CS i.e 65% while 35% were having emergency CS, which is statistically significant (p-value <0.0001) (Figure-2).

Indications of Elective C-section

The study showed that previous CS was found to be the most frequent cause for performing elective CS, followed by malpresentation. Maternal wish is another rising new indication which accounted

for 7.6% of CS (Figure-3).

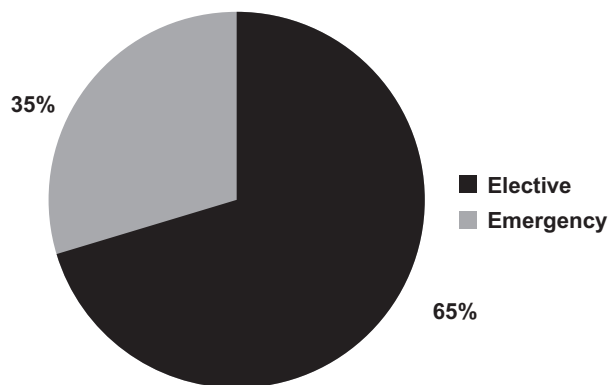


Figure 2: Percentage of elective and emergency C-section

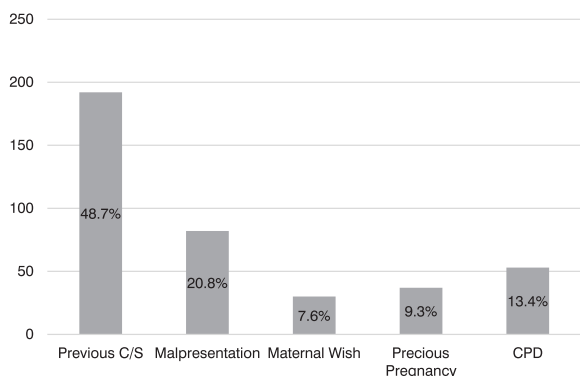


Figure-3. Indications of Elective C-section (%age), p-value<0.01

Indications of Emergency C-section

Fetal distress was the commonest indication 27.27% for emergency CS followed by failure to progress 20% (Figure-4).

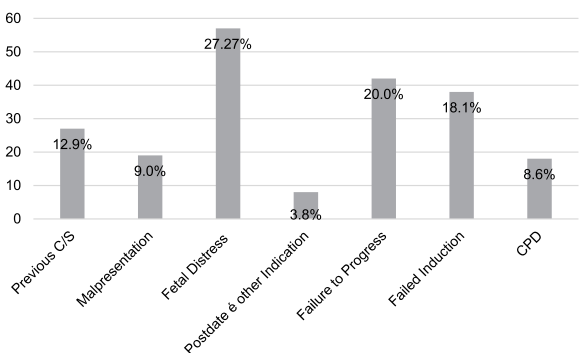


Figure-4. Indications of Emergency C-section (%age), p-value<0.01

Indications of C-section in Primigravida

Most of the CS performed in primigravida were because of fetal distress 23.3%. The second

common cause was fetal malpresentation. Other details are given in Figure-5.

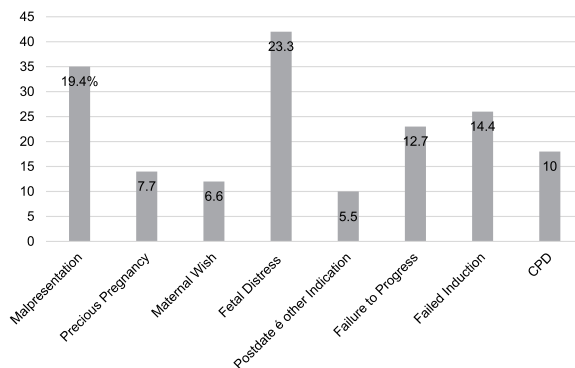


Figure-5. Indications of C-section in Primigravida (%age), p-value<0.001

Indications of C-section in Multigravida

Previous CS was the top most cause for CS in multigravida. Similar to primigravida, malpresentation was the second common cause for CS in multigravida as well (Figure-6).

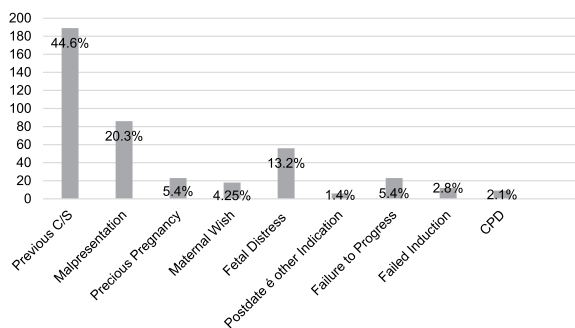


Figure-6. Indications of C-section in Multigravida (%age), p-value<0.001

DISCUSSION

Among the total 603 C-sections during the study period, 423 (70%) were multigravida and 180(30%) were primigravida. Among the total CS performed, elective CS (65%) were significantly higher than emergency CS (35%) with $p < 0.05$. In primigravida, fetal distress was the main indication while in multigravida previous CS was the most common. Maternal wish is another rising new indication which accounted for 7.6% of elective CS.

Current study revealed fetal distress as the most frequent indication of CS in primigravida, which links with the studies conducted by Sobande et

al and Kolawole et al.^{11,12} Moni et al and Saha et al also found fetal distress the main reason for CS.^{13,14} Annelee et al showed that failure to progress (53.2%) was the commonest cause in primigravida for primary CS.¹⁵ The incidence of CS in multigravida was significantly higher and its main reason was previous CS in 44.6% cases. In contrast to our results, study of CS in multipara by Himabindu et al (24.7%) and Desai et al (25.58% cases) showed fetal distress as the most common indication.^{16,17} Birla et al found fetal distress as the leading cause for CS both in primigravida and multigravida.¹⁸ Results of our study revealed that if patients have proper and regular antenatal visits and their first labor gets properly managed, rate of CS can be significantly decreased. In Pakistan, due to lack of awareness, education, poverty and social issues, usually antenatal visits are either skipped or not done properly, and in majority of cases they prefer home deliveries especially in rural areas by untrained staff which sometimes ends up in complications. Complications like obstructed labour, secondary arrest, rupture uterus again becomes indication for CS.

Present study also compared various indications of elective and emergency CS. Previous CS significantly increased the rate of elective surgery followed by malpresentation while in emergency CS, fetal distress was the main cause followed by failure to progress. Fetal and maternal morbidity and mortality can be reduced by proper antenatal visits, timely diagnosis, early referral and proper birth interval by appropriate execution of family planning services.¹⁸ In our study, incidence of elective CS (35%) is far higher than the results of Bamon et al (5.9%) while for emergency CS it was less.¹⁹ It may be explained by the fact that majority of our patients are already booked and have done proper antenatal visits.

In present study, total caesarean rate was 20%, more frequent was in multigravida i.e 70% which is in contrast to Alagesan et.al.²⁰ The incidence for primigravida i.e 30% is much higher than that found by M. Alagesan et.al (9.31%) and Birla et.al (9.81%).^{20,18} It may be due to large number of patients are referred especially from rural areas because of difficult delivery and obstructed

labour with history of patients being managed by unqualified staff. Second reason could be that the number of multigravida is more in our study as compared to primigravida. A study conducted by Annelee et al and Bamon et al shows the incidence of CS 30.8% and 31.8% respectively in primigravida.¹⁵ These percentages are in accordance with our study.

Maternal wish is another rising new indication for CS which accounted for 4.2% in our study. Study performed by Mandi et al reported 1.7% C-sections on maternal wish while Bamon et al found it almost 2.5%.^{3,1} Similarly, Prajapati et al reported 3.5% CS on maternal request.⁵ In our study the numbers are almost doubled, it may be because in this part of world early marriages especially in teen age are usually preferred, so patients may be afraid of labor pain and vaginal trauma. Other possible factors could be concern for injury/death of fetus, anxiety of childbirth, fecal/urinary incontinence during labour, doctor's suggestion, birth timing, bad experience of previous delivery, prior infertility, fear for gynecologic examination, avoidance of long labour and various emotional aspects.

CONCLUSION

The current study includes a good number of patients to conclude the results upon. It shows the incidence of CS was higher in multigravida than primigravida. Similarly, rate of elective C-section was more than emergency ones. Previous cesarean deliveries was the top most cause for CS in multigravida and for elective CS while fetal distress was the major cause in primigravida and for emergency CS. Maternal wish is another rising new indication for CS.

RECOMMENDATIONS

For reducing caesarean rate,

1. Indications for CS should be properly evaluated.
2. Proper antenatal counselling should be done with patients regarding labor, its stages, management, risks.
3. Obstetrician should give trials of labor for increasing vaginal deliveries among women who have had prior CS.

4. Full support to laboring patients in form of attending nurse, doctor and a family member.
5. Avoiding postdates pregnancies by timely inductions.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
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2	Basirat Bukhari	Literature search, conception & design, important intellectual content and final approval.	
3	Sarwat Irfan	Literature search, conception & design, acquisition of data and final approval.	
4	Rizwan Faisal	Conception & design, Acquisition of data, Important intellectual content	