

Frequency of Fetal and Maternal Complications after C-Section in Vaginal Deliver

SHAHNEELA MEMON¹, NASEEM², HAFIZA KHATOON³, DURGA DEVI⁴, KANTA BAI⁵, MUHAMMAD ANIQUE⁶, KIRAN AAMIR⁷, AAMIR RAMZAN⁸

¹Senior Registrar at Ghulam Mohammad Maher Medical College Sukker

²WMO, Population Welfare Department Moro District Noushero Feroz

³Assistant Professor, Gynaecology and Obstetrics Department, Peer Syed Abdul Qadir Shah Jeelani Institute Gambat

⁴Lecturer in Pathology Department Bilawal Medical College, Liaquat University of Medical and Health Sciences Jamshoro Hyderabad.

⁵MBBS, Liaquat University of Medical and Health Sciences Jamshoro Hyderabad

⁶Senior Lecturer, Medical Education Department, Bhitai Dental and Medical College Mirpurkhas

⁷Associate professor in Pathology Department Liaquat university of Medical and health sciences jamshoro Hyderabad

⁸Lecturer in Pathology Department Liaquat university of Medical and health sciences jamshoro Hyderabad

Corresponding author: Shahneela Memon, Email: shaneememon@gmail.com, Cell: 03313524106

ABSTRACT

Objective: The purpose of this study was to evaluate the foetal and mother outcomes of attempting a vaginal delivery following a prior caesarean section.

Study Design: Cross-sectional study

Place and Duration: Gynaecology and Obstetrics Department Ghulam Mohammad Maher Medical College Sukker. January 2022-December 2022

Methods: Total 50 pregnant females had gestational age 37-42 weeks and had history of one c-section were included. During labor, the mother and baby were closely monitored for indicators of fetal distress, including changes in heart rate, discomfort, and tenderness in the lower abdomen. Written informed consent was obtained using a consent form, and data was collected using pre-designed Performa. Complications among all females were recorded. SPSS 23.0 was used to analyze all data.

Results: There were 30 (60%) females had age 18-30 years, 16 (32%) patients had age 31-40 years and 4 (8%) had age 41-45 years. Mean gestational age of the females was 39.17±14.63 weeks. Majority 35 (70%) females had poor socioeconomic status. 21 (42%) cases were educated. Out of the 50 pregnant females, 16 (32%) had vaginal deliveries and 34 (68%) had emergency cesarean section. Frequency of fetal distress was higher in cases of c-section as compared to vaginal deliveries with p value <0.005. As per maternal complications, wound infection and post op fever was higher in c-section while perineal tear and UTI was higher in vaginal deliveries. Post-partum hemorrhage was found in 7 cases, cases in c-section and 3 cases in vaginal deliveries. Frequency of fetomaternal favorable outcomes in vaginal deliveries were higher but difference was insignificant.

Conclusion: This research shows that CS is associated with a higher risk of fetal distress, wound infection, and mother fever than vaginal delivery. Future morbidity from CS can be reduced if pregnant patients are urged to have vaginal births.

Keywords: C-sectional, vaginal delivery, Complications, Favorable outcomes

INTRODUCTION

Pregnancy and childbirth are natural processes that women go through to replenish the human population. Approximately 10% of births are classified as high risk and may necessitate a caesarean section (CS), yet the vast majority of pregnancies end in a vaginal delivery. When vaginal delivery is medically impossible (emergency CS) or when the hazards of vaginal delivery are deemed to exceed the risks of CS (planned CS), a caesarean section (CS) may be performed to ensure the safety of the mother and child.[1–3]

The CS rate has increased to a historic high of 46% in China and 25% or more in several nations across Asia, Europe, Latin America, and the United States in recent years.[4] It is believed that around 20 million CS are delivered annually around the world now. Therefore, it is the most common operation of its kind in adults.[5] Approximately 33 percent of births worldwide occur by CS, with a prevalence that varies widely by region (from 4 percent in Africa to 29 percent in Latin America and the Caribbean).[4,7]

Maternal hazards (including hysterectomy, death, and harm to peripheral organs) have been linked to the rising rate and frequency of caesarean deliveries [8]. Premature birth, poor Apgar (appearance, pulse, grimace, activity, respiration) score at birth, stillbirth, and early infant death are all connected with an increasing rate and quantity of caesarean deliveries [9].

Although factors such as birth timing, surgeon experience, centre competence, surgical technique, and anaesthesia risk all play a role in the emergence of complications, little is known about the factors contributing to the management outcomes [10].

Furthermore, several nations attempt to address the issue by providing a trial of labour after caesarian delivery (TOLAC), decreasing the number of primary CS through improved follow-up, and employing instrumental deliveries where necessary [3, 10].

However, these measures were insufficient to prevent some of the consequences from occurring.

Furthermore, some studies assess outcomes based on the actual form of birth rather than the intended mode of delivery.[11,12] This method runs the danger of leading to an unneeded caesarean section because the hazards of a vaginal birth are ignored.

In order to execute a nationwide data analysis according to planned method of delivery, the Danish register-based coding system presents a fantastic chance to develop a well-designed proxy, overcoming the constraints of earlier attempts. As a result, researchers used information from the Danish Medical Birth Registry to conduct a large retrospective population-based cohort study examining the topic of desired mode of birth.

Patients who have had a CS but have also given birth vaginally in the past have a higher chance of giving birth vaginally again. Previous caesarean deliveries due to poor obstetric history would render the scar tissue trial useless. Patient selection for a trial of labour is especially important given that the best outcome was associated with a successful trial of labour after one CS.[12] This research looked at the outcomes of a labour trial in which a previous Caesarian section had been performed.

MATERIALS AND METHODS

This cross-sectional study was conducted at Gynaecology and Obstetrics Department Ghulam Mohammad Maher Medical College Sukker and comprised of 50 pregnant females. All women who previously had 1 cesarean delivery were included in the study. The primary study comprised patients with a singleton delivery at 37 to 42 weeks of gestation in the current pregnancy and patients between the ages of 18 and 45. Patients having a history of multiple CSs, diabetes or hypertension diagnoses, or any conditions that would exclude a vaginal delivery in the current

pregnancy, such as placenta previa, malpresentation, or a healthy baby as determined by ultrasound were disqualified.

The participant's consent was given voluntarily and after proper explanation. The term "demographic variable" refers to information on a group of people, such as their name, age, and location. The decision to induce labor was taken at 37 weeks. A ready intravenous line was maintained, and blood group and cross-matching preparations had been made. It was okay for patients to induce labor on their own. Throughout the trial of labor, patients were closely monitored for changes in vital signs, fetal cardiac activity, lower abdominal pain and tenderness, and fetal distress. An emergency CS facility was accessible throughout the whole labor trial. The fetal and maternal outcomes were vaginal birth and fetal pain. All data was captured for later analysis. SPSS version 23 was used to analyze the data. Gestational age was reported as a mean + standard deviation, and information on parity, mother outcome in normal vaginal birth, and fetal distress was supplied in frequency and percentage formats.

RESULTS

There were 30 (60%) females had age 18-30 years, 16 (32%) patients had age 31-40 years and 4 (8%) had age 41-45 years. 22 (44%) females had BMI >25 kg/m² and 28 (56%) cases had BMI <25kg/m². Mean gestational age of the females was 39.17±14.63 weeks. Majority 35 (70%) females had poor socioeconomic status. 21 (42%) cases were educated.(table 1)

Table-1: Demographics of the presented pregnant females

Variables	Frequency	Percentage
Age (years)		
18-30	30	60
31-40	16	32
41-45	4	8
BMI		
<25kg/m ²	28	56
>25kg/m ²	22	44
Mean gestational age (weeks)	39.17±14.63	
Socio-economic status		
Poor	35	70
Good	15	30
Education Status		
Educated	21	42
Non-educated	29	58

Out of the 50 pregnant females, 16 (32%) had vaginal deliveries and 34 (68%) had emergency cesarean section.(figure 1)

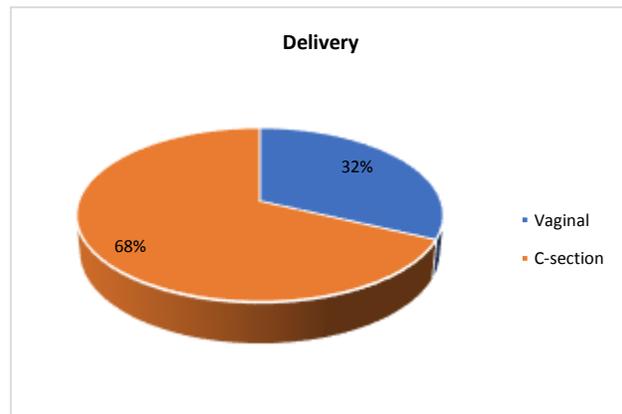


Figure-1: Mode of delivery

Frequency of fetal distress was higher in cases of c-section as compared to vaginal deliveries with p value <0.005. As per maternal complications, wound infection and post op fever was higher in c-section while perineal tear and UTI was higher in

vaginal deliveries. Post-partum hemorrhage was found in 7 cases, cases in c-section and 3 cases in vaginal deliveries.(table 2)

Table-2: Frequency of fetomaternal complications among all cases

Variables	Vaginal Delivery (16)	C-section (34)
Fetal Distress		
Yes	1	8
No	15	26
Maternal Complications		
wound infection	2	13
post op fever	4	15
perineal tear	5	2
UTI	4	1
Post Partum Hemorrhage		
Yes	3	7
No	13	27

Frequency of fetomaternal favorable outcomes in vaginal deliveries were higher but difference was insignificant.(table 3)

Table 3: Comparison of favorable outcomes

Variables	Vaginal Delivery (16)	C-section (34)
Favorable Outcomes		
Yes	14 (87.5%)	28 (82.4%)
No	2 (12.5%)	4 (17.6%)

DISCUSSION

However, CS form of delivery is related with unfavourable fetomaternal outcomes, while being one of the lifesaving treatments credited with reducing maternal and newborn morbidity and mortality rates and an indicator for the quality of maternal health services provided. Important socio-demographic, obstetric, and delivery factors were identified in this study as having a bearing on maternal and foetal prognosis following caesarean section. Some of these factors include living in a rural area, having a poor Apgar score at 5 minutes, being a mother with a parity of two or more, or not receiving antenatal care follow-up during the most recent pregnancy.[13]

Compared to vaginal births, caesarean procedures are associated with a three-quarters increase in mortality, and their use is on the rise worldwide, including in developing nations. The percentage of women giving birth via caesarean section in Pakistan has climbed considerably, from 3.2% in 1990 to 19.6% in 2018. Foetal distress, prolonged labour pain, wound infections, a history of caesarean section, and placenta rupture are most common medical grounds for CS in Pakistani hospitals, according to further research. The detrimental effects of a high CS rate on mother health and the expense of obstetric care are too great to be ignored. Patients who have already undergone one Caesarian should be referred for a trial of labour after thorough evaluation and counselling in order to reduce the overall rate of CS. The purpose of this research was to examine the impact of attempting a natural childbirth after one previous C-section on foetal and mother outcomes. Younger women have a higher rate of vaginal birth success compared to their older counterparts.[14,15]

In current study 50 pregnant females were included. There were 30 (60%) females had age 18-30 years, 16 (32%) patients had age 31-40 years and 4 (8%) had age 41-45 years. 22 (44%) females had BMI >25 kg/m² and 28 (56%) cases had BMI <25kg/m². Mean gestational age of the females was 39.17±14.63 weeks. These results were inline to the previous studies.[16,17] Several key socio-demographic, obstetric, and delivery factors were found to significantly affect mother and foetal outcome following caesarean section. In our study, majority 35 (70%) females had poor socioeconomic status. 21 (42%) cases were educated. Out of the 50 pregnant females, 16 (32%) had vaginal deliveries and 34 (68%) had emergency cesarean section. In their study, Kiwan et al. (2018) found that between 50% and 66.6% of Cs were successful in inducing labour. [18] In another study, 297

women went through the labour process and 134 (45.1% of the total) had successful vaginal births.[19] The cost of caesarean sections (CS) in Asia is significantly higher than the cost of natural childbirth, and the cost of postoperative care is another factor to consider. Similar findings were also found in other investigations. [20] Births of very premature singletons and multiples are associated with an increased risk of CS, while births of singletons at 39 and 40 weeks are associated with a decreased risk.[21]

Frequency of fetal distress was higher in cases of c-section as compared to vaginal deliveries with p value <0.005. As per maternal complications, wound infection and post op fever was higher in c-section while perineal tear and UTI was higher in vaginal deliveries. Post-partum hemorrhage was found in 7 cases, cases in c-section and 3 cases in vaginal deliveries. Women who receive ANC after a caesarean delivery or a vaginal delivery are less likely to have an unfavourable fetomaternal outcome, according to a study conducted in Mettu Kharl and Mekelle.[22,23] Another study found that compared to urban mums, those who gave birth via caesarean in Gelemso, Arba Minch, and the health facility in the north Wollo zone were 1.45 and 1.58 times more likely to experience an unfavourable fetomaternal outcome.[24]

CONCLUSION

This research shows that CS is associated with a higher risk of fetal distress, wound infection, and mother fever than vaginal delivery. Future morbidity from CS can be reduced if pregnant patients are urged to have vaginal births.

REFERENCE

- 1 Shabnam S. Caesarean section delivery in India: causes and concerns; 2009; 1–20. Available From: https://iussp.org/sites/default/files/event_call_for_papers/CaesareansectiondeliveryinIndia_0.pdf. Accessed June14, 2021.
- 2 RezaieSardari B. A survey on causes of cesarean sections performed at the University Hospitals of Niknafs and Ali-IbnAbiTalib of Rafsanjan, Iran, In The Second Trimester of 2014. *JOHE*. 2014;3(2).
- 3 Muhumed AA. Magnitude of maternal complications and associated factors among women who gave birth by cesarean section at general western [internet]. Haramaya University; 2016. Available from: <http://213.55.85.90/bitstream/handle/123456789/3134/> Amin Ahmed Muhumed. pdf. Accessed June 14, 2021.
- 4 Hafeez M, Yasin A, Badar N, et al. Prevalence and indications of caesarean section in a teaching hospital. *JIMSA*. 2014;27(1):92–93.
- 5 Soto-Vega E, Casco S, Chamizo K, et al. Rising trends of cesarean section worldwide: a systematic review. *Obstet Gynecol Int J*. 2015;3(2).
- 6 Gutema H, Shimye A. Caesarean section and associated factors at MizanAman General Hospital Southwest Ethiopia. *J Gynecol Obstet*. 2014;2(3):37–41. doi: 10.11648/j.gjo.20140203.12
- 7 Unnikrishnan B, Prasad RB, Amarnath A, et al. Trends and indications for caesarean section in a tertiary care obstetric hospital in Coastal South India. *AMJ*. 2010;821–825. doi: 10.4066/AMJ.2010.465
- 8 Beliza M, Althabe F, Sosa C, Gibbons L, Jacquerioz F, Bergel E. Cesarean section rates and maternal and neonatal mortality in low-

- medium-, and high-income countries: an ecological study. *Birth*. 2006;33(4):270–7.
- 9 Lyell DJ. Adhesions and perioperative complications of repeat caesarean delivery. *AJOG*. 2012;9:11–8.
- 10 Choudhary GA, Patell MK, Sulieman HA. The effects of repeated caesarean sections on maternal and fetal outcomes. *Saudi J Med Med Sci*. 2015;3(1):44.
- 11 Burrows LJ, Meyn LA, Weber AM. Maternal morbidity associated with vaginal versus cesarean delivery. *Obstet Gynecol*. 2004; 103: 907-912.
- 12 Benedetto C, Marozio L, Prandi G, Roccia A, Blefari S, Fabris C. Short-term maternal and neonatal outcomes by mode of delivery A case-controlled study. *Eur J Obstet Gynecol Reprod Biol*. 2007; 135: 35- 40.
- 13 Chien HC, Chen HM, Garett M, Wang RH. Predictors of physical activity in patients with heart failure: a questionnaire study. *J Cardiovasc Nurs*. 2014 Jul;29(4):324-31.
- 14 Klompstra L, Jaarsma T, Strömberg A. Physical activity in patients with heart failure: barriers and motivations with special focus on sex differences. *Patient Prefer Adherence*. 2015 Nov 9;9:1603-10.
- 15 Fuentes-Abolaño, I.J., Stubbs, B., Pérez-Belmonte, L.M. et al. Physical functional performance and prognosis in patients with heart failure: a systematic review and meta-analysis. *BMC Cardiovasc Disord* 20, 512 (2020).
- 16 Bliddal M, Broe A, Pottegård A, Olsen J, Langhoff-Roos J. The Danish medical birth register. *Eur J Epidemiol*. 2018; 33(1): 27- 36
- 17 Liu S, Liston RM, Joseph KS, Heaman M, Sauve R, Kramer MS. Maternal mortality and severe morbidity associated with low-risk planned cesarean delivery versus planned vaginal delivery at term. *Maternal Health Study Group of the Canadian Perinatal Surveillance System*. *CMAJ*. 2007; 176: 455- 460.
- 18 Kiwan R, Al Qahtani N. Outcome of vaginal birth after cesarean section: A retrospective comparative analysis of spontaneous versus induced labor in women with one previous cesarean section. *Annals of African medicine*. 2018;17(3):145-50.
- 19 Kalisa R, Rulisa S, van Roosmalen J, van den Akker T. Maternal and perinatal outcome after previous caesarean section in rural Rwanda. *BMC pregnancy and childbirth*. 2017;17(1):272.
- 20 Rasool MF, Akhtar S, Hussain I, Majeed A, Imran I, Saeed H, et al. A Cross-Sectional Study to Assess the Frequency and Risk Factors Associated with Cesarean Section in Southern Punjab, Pakistan. *International journal of environmental research and public health*. 2021;18(16).
- 21 Madaan M, Agrawal S, Nigam A, Aggarwal R, Trivedi SS. Trial of labour after previous caesarean section: the predictive factors affecting outcome. *Journal of obstetrics and gynaecology : the journal of the Institute of Obstetrics and Gynaecology*. 2011;31(3):224-8.
- 22 Seyom E, Abera M. Maternal and fetal outcome of pregnancy related Hypertension in Mettu Karl Referral Hospital, Ethiopia; 2021. Available from: <https://pdfs.semanticscholar.org/04f1/89db460d14fc4d4d20c483c6bb7c777546.pdf>. Accessed June14, 2021.
- 23 Berhe H, Berhe H. Factors associated with patterns of birth outcome at public hospitals in Mekelle Town, Tigray Region, Ethiopia; 2013. Available from: http://www.jbino.com/docs/Issue02_04_2015.pdf. Accessed June14, 2021.
- 24 Tesfaye T, Hailu D. Magnitude of maternal complication and associated factors among mothers undergone cesarean section at Yirgalem General Hospital, SNNPR, Ethiopia; 2021. Available from: http://www.ijhsr.org/IJHSR_Vol.7_Issue.5_May2017/41.pdf. Accessed June14, 2021.