

Study on Factors and Outcome of Emergency Caesarean Section Among the Patients Admitted in BSMMU Hospital

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ABSTRACT

Background:Caesarean delivery is defined as the delivery of a fetus after the end of 28th week through surgical incisions made through the abdominal and the uterine wall. Caesarean deliveries were initially performed to separate the mother and the fetus in an attempt to save the fetus of a moribund patient. Caesarean birth is common and emergency procedures are often required with little advance warning. The emergency response category sits within a clinical urgency category system which covers all degrees of urgency of CS. The emergency category is broad, as it may include procedures done within minutes to save the life of a woman or baby as well as those in which woman and baby are well but where early delivery is needed. Emergency caesarean section was associated with previous caesarean section, parity, age and a score reflecting medical risk, but not fear of childbirth or anxiety measures.

Objective: To evaluate the factors and outcome of emergency caesarean section.

Methods:It was a cross sectional study carried out in the Department of Obstetrics &Gynaecology, Bangabandhu Sheikh Mujib Medical University, Dhaka, During the period of February 2013 to July 2013. Total 100 patients were included in this study. This study includes the woman who has undergone emergency caesarean section. **Results:**Majority (95%) of patients were from the age group 18-35 years. The mean age was, 26.94±5.66 years and minimum and maximum ages were 19 and 45 years respectively. Approximately 41% of patients received regular antenatal care (ANC), 34% irregular and 25% did not receive antenatal care. Of the 100 patients, the indications for emergency CS were prolonged labour (24%), obstructed labour (11%), pre-eclampsia (52%), eclampsia (8%), cephalo-pelvic disproportion (22%), postdated pregnancy (19%), APH (21%) and malpresentation (18%) observed to be the main indications. Wound infection accounted for 14% of mothers, followed by post spinal headache in 12%, PPH in 6%, UTI in 5%, and puerperal sepsis in 4%. Of the 13% perinatal death, 4(4%) were stillborn and 87(87) live births.

Conclusion:The most common indications for emergency caesarean sections are foetal distress, prolonged labour, obstructed labour, eclampsia, pre-eclampsia, postdated pregnancy, antepartum Haemorrhage, cephalo-pelvic disproportion and malpresentation. Good antenatal and intrapartum care and early referral will reduce the maternal and perinatal morbidity and mortality.

Keywords:Caesarean delivery, Moribund patient, Abdominal and Uterine wall

I. INTRODUCTION

Caesarean section (CS) is the most common major obstetric procedure. Haemorrhage is one of the most common complications during and after caesarean section. [1] The World Health Organization recommends the rate of Caesarean sections is 10% and 15% of all births in developed countries. [2] However caesarean rate was about 20% in the United Kingdom, while the Canadian rate was 22.5%. [3] In the United States the Caesarean rate is 31.8%. [4] In Brazil's public health network, the rate reaches 35%. China has been

cited as having the highest rates of caesarean sections in the world and the rate was 46%. [5] In Bangladesh the survey indicated that 23% of births were delivered by caesarean section. [6]

Caesarean section is associated with risks of post-operative adhesions, incisional hernias (which may require surgical correction) and wound infections. If a caesarean section is performed under emergency situations, the risk of the surgery may be increased due to a number of factors. The patient's stomach may not be empty, increasing the anaesthesia risk. Other risks include severe bloodloss (which may require a blood transfusion) and post spinal headaches. [7]

Most often, the nature of CS, in terms of whether it is performed as an elective surgical procedure or an emergency, is predicted on the indication for the CS. When the need for a CS arises, it is often much better for the patient if adequate time is allowed to prepare for the procedure. Thus, when the CS is performed electively, the chances of morbidity complicating the operation would be much less than when it is performed as an emergency. [4] However, in spite of all attempts to electively delivered by CS, many times emergency CS may have to be restored for fetal or maternal salvage, even if there may be problems associated with it. [8]

The intraoperative complications encountered in emergency CS tend to be more of hemorrhage, scar window and the need to extend the uterine incisions. Postoperatively, however, there is a greater incidence of fever, urinary tract infection and wound infections in emergency CS. It is common for emergency operations to be undertaken when the patient has been in labor, membranes have been ruptured over a period of time, and several vaginal examinations have been performed, thereby introducing potent sources of postoperative sepsis. Increased hemorrhage in emergency CS may be due to the stretching of the lower segment and the impaction of the presenting part into the pelvic cavity. [8]

The incidence of caesarean section (CS) is increasing worldwide with, however, large variations. Causes for the increase are complex. One cause is a rise in nulliparous women, including low-risk nulliparous women. Nulliparous women at term with a singleton infant in cephalic presentation, spontaneous onset of labour and no planned caesarean section or induction, gave birth by emergency caesarean section (ECS). The frequency of ECS in low-risk nulliparous women in Denmark increased by 28%. [8, 9] Trends for caesarean section among nulliparous women are of particular interest, as the course of the first delivery is crucial for the course and outcome of the following pregnancies. CS is associated with increased risk of placenta complications and uterine rupture in subsequent pregnancies and births. Complications related to labour, such as laceration, haemorrhage and infections are more frequent in women who previously underwent emergency caesarean section.

II. METHODOLOGY

This is a cross sectional study. This study was carried out on 100 patients to find out about the population including female patients in the Department of Obstetrics and Gynaecology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. The duration of the period from February 2013 to July 2013. After collection, the data were checked and cleaned, followed by editing, compiling, coding and categorizing according to the objectives and variable to detect errors and to maintain consistency, relevancy and quality control. The choice of treatment was made by the patient after a full discussion with the multidisciplinary team consisting of Transfusionists. The data for this study about had been accumulated from patients' medical information. Statistical evaluation of the results used to be got via the use of a window-based computer software program devised with Statistical Packages for Social Sciences (SPSS-24).

III. RESULTS

Table 1: Demonstrate of the distribution of the study (n=100)

	n	%	Mean±SD
Age in years			
≤18	2	2	26.94±5.66
18-35	95	95	
>35	3	3	
Parity			
Primigravida	35	35	
Multigravida	65	65	
Socio-economic status			
Upper class (>1500 taka)	4	4	
Middle class (5000-10000 taka)	15	15	
Lower class (<5000 taka)	81	81	

Antenatal care			
Regular	41	41	
Irregular	34	34	
Not done	25	25	

Table 1 shows majority (95%) patients belonged to the age group 18-35 years followed by 3% in the age group >35 years. The mean±SD was 26.94±5.66. This table shows that 35% were primigravida and 65% were multigravida. Majority 81% cases belong to lower socio-economic status and near half of the patients had regular antenatal checkup.

Table 2: Medical problems of the mother during pregnancy and Gestational age at the time of operation (n=100)

Medical problems	n	%
Anaemia	85	85
Absent	6	6
Mild	36	36
Moderate	32	32
Severe	11	11
PET	11	11
Jaundice	4	4
Gestational age	n	%
28-37 weeks	7	7
37-40 weeks	81	81
>40 weeks	12	12

Table 2 shows that most of the patients were mild to moderate anaemic (68%).Table shows the majority 81% patients were between 37-40 weeks of gestation.

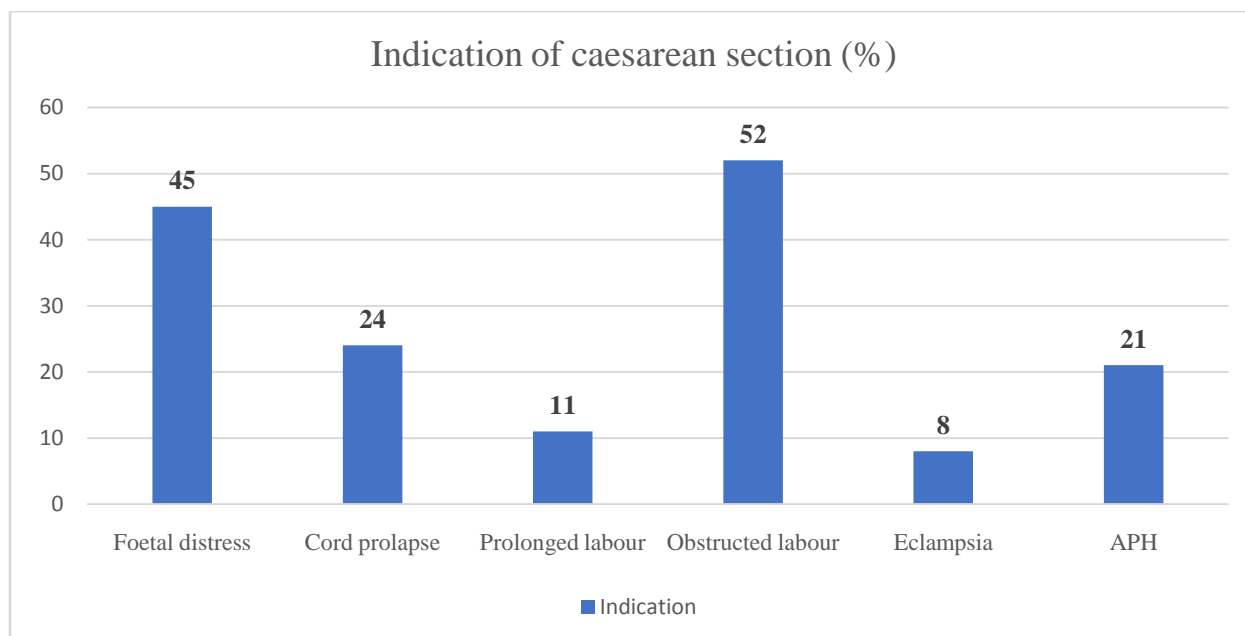


Figure 1: Distribution of patient's different indication of caesarean section (n=100)

Total will not correspond to 100% because of multiple complication in individual patients. The indications for emergency CS were foetal distress (45%), prolonged labour (24%), obstructed labour (11%), pre-eclampsia (52%), eclampsia (8%), cephalo-pelvic disproportion (22%), postdated pregnancy (19%), APH (21%) and malpresentation (18%).

Table 3: Distribution of patients by complication during operation (n=100)

Complication	n	%
excessive hemorrhage	14	14
Anesthesia complication (spinal hypotension and cardiac arrest)	6	6
Injury to surrounding structures	1	1

Table shows that 14% mother encountered excessive hemorrhage, 6% anesthesia complication and injury to surrounding structures (1%). Of the six women with anesthetic complication, 4 had spinal hypotension and 2 had cardiac arrest.

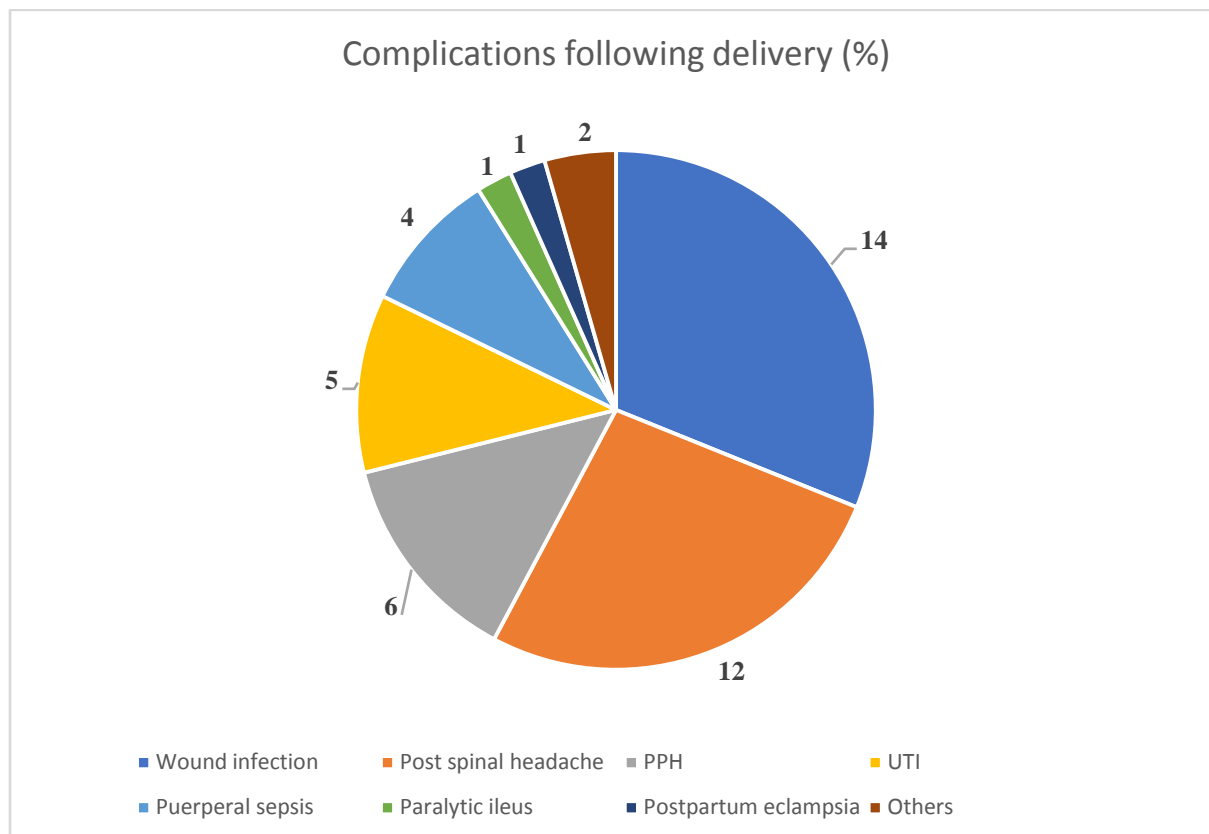


Figure 2: Complication following delivery (n=100)

Figure shows the distribution of mothers by complication. Wound infection accounted for 14% of mothers, followed by post spinal headache in 12%, PPH in 6%, UTI in 5%, and puerperal sepsis in 4%.

Table 4: Complication following delivery (n=100)

Neonatal outcome	n	%
Death	13	13
Still birth	4	4
Neonatal Death	9	9
Alive	87	87
Needed resuscitation	29	33.33
Not needed	58	66.67
Birth weight (87)		
LBW (<2.5 kg)	19	21.84
Average (2.5-4 kg)	62	71.26
Over weight (>4 kg)	6	6.90
APGAR score (at birth)		
<7	36	41.38

	≥7	51	58.62
Fetal Complication			
Congenital anomaly		1	1.0
Birth asphyxia		21	21.0
Prematurity		7	7.0
Prematurity		7	7.0
Jaundice		9	9.0

Out of 100 delivery, 13(13%) had perinatal death. Of them 4(4%) had still birth and 9(9%) neonatal death. Over one third (33.33) of babies needed resuscitation. About 21.84% babies were low birth weight, 71.26% of normal weight and 6.9% over weight. Nearly 41.38% of babies had APGAR score <7 at birth. Congenital anomalies were present 1%, birth asphyxia in 21%, septicemia in 7%, prematurity in 7% and jaundice in 9%.

IV. DISCUSSION

Caesarean section is a safe operation and in many countries its frequency is on the rise. [10, 11, 12] In recent years, however the use of caesarean has become increasingly controversial, uncertainty exists about the relative risks and benefits to the patients. All over the world there has been a steady rise in the incidence of caesarean section. Since that time caesarean section rate has plateaued, both in USA and several other developed countries. [13] The increased rate of caesarean sections in the present scenario is due to increasing maternal age, reduced parity, breech presentation, decreased incidence of assisted vaginal delivery, extensive use of electronic fetal monitoring, malpractice litigation. [13, 14]Caesarean section performed as an emergency or elective procedures are entirely different entities according to measures taken, facilities and skilled staff available and preparation done. Emergency caesarean section are commonly performed for fetal distress, Prolonged/obstructed labor, several pre-eclampsia, ante-partum hemorrhage and ruptured uterus. The present study was designed to evaluate factors and outcome of emergency caesarean section at our hospital.

In the present study, the mean age was 26.94±5.66 years and minimum and maximum ages 19 and 45 years respectively. This is consistent with findings of Sreevidyit [15] who demonstrated mean age of the mothers at delivery to be 26.6 years. This study shows 35% were primigravida and 65% were multigravida. This finding consisted with Geidam et al. [16] study which 36.7% in primigravida and 63.3% in multigravida. Foetal distress (45%) and pre-eclampsia (52%) were observed main indication. The following prolonged labour (24%), obstructed labour (11%), eclampsia (8%), cephalo-pelvic disproportion (22%), postdated pregnancy (19%), APH (21%) and malpresentation (18%) which is similar to the reports from other developing country. [17, 18] Foetal distress (45%) and pre-eclampsia (52%) were observed main indication. The following prolonged labour (24%), obstructed labour (11%), eclampsia (8), cephalo-pelvic disproportion (22%), postdated pregnancy (19%), APH (21%) and malpresentation (18%) which is similar to the reports from other developing country. [18, 19]

Geidam et al. [16] reported in their study cephalo-pelvic disproportion (15.5%), previous caesarean section (14.7%) and eclampsia (10.2%) as the main indication of caesarean section. Barley [20] reported in his study obstructed labour (11%), failed induction (26%), transverse lie (6%) and placenta praevia (13%) as the main indications of caesarean section. Rout observed eclampsia (4.8%). pre-eclampsia (17.3%) to be the main indications. Yudkin [21] reported indications of caesarean section in the developed countries in the past decades were foetal distress and breech presentation. Another study Saha et al. the main indications were fetal distress (35%), pre-eclampsia (14%) and cervical dystocia (12%).

In this study, 14% mother encountered excessive hemorrhage, 6% anesthesia complication and bladder injury (0.5%). Of the nine women with anesthetic complications, 6 had spinal hypotension and 3 had cardiac arrest Saha et al. [22] reported similar findings in his article with hemorrhage being 12% and anesthesia complication 0.8%. This study shows following complication wound infection accounted for 14% of mothers, followed by post spinal headache in 12%, PPH in 6%, UTI in 5%, and puerperal sepsis in 4%. Cannon reported in his study puerperal sepsis in 21% of mothers, PPH in 3%, UTI in 6%. In another study, Geddes [23] demonstrated puerperal sepsis (17.2%), post spinal headache (11.4%), UTI (6%) and postpartum eclampsia (1.2%) of patients as the main postpartum complications.

In our study maternal mortality was 2% occurred in emergency caesarean. Ali et [24] reported maternal mortality rate was 1%. The maternal mortality in developing countries is mainly contributed by illiteracy and poverty with poor antenatal services. Of the 13 perinatal deaths, 4 were still born and 9 died soon after birth. Twenty-nine babies needing resuscitation. In terms birth weight of the babies 20.76% was of low birth-weight, 73.22% of normal weight and 6.9% overweight. Nearly 41.38% of babies had APGAR score <7 and the rest 7 or more than 7 at birth. Congenital anomalies were present in 1%, birth asphyxia in 21%, prematurity in 7%, jaundice in 9% and septicemia in 7% of babies. In Roosmalen et al. [25] study still birth (4.1%) and neonatal death (9.3%) were almost equal.

In this study, foetal distress and pre-eclampsia were the two main indications for caesarean section. These conditions can be prevented to a large extent provided certain preventive measures are taken. Among the measures, prevention of premature induction could be done by careful taking of history (1st day of last menstrual period), examination (symphysiofundal height and abdominal girth) and early ultrasonography (dating ultrasonography). All these measures could help revealing exact EDD which, in turn, help us avoiding premature induction of labour and also failed induction which necessitates caesarean section. Evaluation of foetal distress by frequent heart rate monitoring using stethoscope and CTG could be helpful to assess real foetal distress and thus help attending physician to reduce caesarean section rate to a certain extent. Besides these, prostaglandin itself sometimes causes foetal distress. So, if induction is done by prostaglandin, foetal heart rate to be cautiously monitored. All these measures may go a long way in reducing the need for caesarean section thereby improving foetal outcome.

V. CONCLUSIONS

This study shows that major indication for emergency caesarean section were foetal distress, prolonged labour, obstructed labour, eclampsia, preeclampsia, postdated pregnancy, antepartum haemorrhage, cephalopelvic disproportion, caesarean hysterectomy and malpresentation. Important role in the analysis of changing trends in caesarean delivery rate the needs and benefits of such changes and to modify the obstetrician trend towards the use caesarean delivery. Prevention of premature induction, careful monitoring of foetal heart rate to evaluate foetal distress and judicious use of prostaglandin may reduce caesarean section, at least, to some extent. All pregnant women should be encouraged to attend antenatal clinic and those who are likely to be delivered by elective CS should be detected early, so that the incidence of failed labour and emergency CS can be reduced.

VI. RECOMMENDATION

Every pregnant woman should be checkup regular antenatal checkup. Women having a CS should be offered prophylactic antibiotics, such as a single dose of first-generation cephalosporin or ampicillin, to reduce the risk of postoperative infections. Pregnant women should be offered a haemoglobin assessment before CS to identify those who have anaemia. Babies born by CS are more likely to have a lower temperature and thermal care should be in accordance with good practice for thermal care of the newborn baby. Pregnant women having CS for antepartum haemorrhage, abruption, uterine rupture, and placenta praevia are at increased risk of blood loss of more than 1,000 ml and should have the CS carried out at a maternity unit with on-site blood transfusion services. Obstetricians should be aware that the effects of different suture materials or methods of skin closure at CS are not certain.

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