

Evaluation on Indication of Emergency Caesarean Section in Shaheed Suhrawardy Medical College & Hospital

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Abstract

Caesarean section is the most frequently performed major operation in obstetrics. Modern obstetric care practice includes the liberalized use of caesarean section for the greater interest of foetal outcome. Emergency caesarean section is often done for the safety of mother or fetus. But the result of emergency caesarean section is not same as an elective caesarean section. Emergency caesarean section was found to be responsible for the most of the foeto maternal morbidity & mortalities. So, indication of caesarean section should be rational to reduce the foeto-maternal morbidity and mortality from caesarean section. The main objective of this study was to determine whether the indications of emergency caesarian section were justified and what were the foeto-maternal outcomes in these emergency caesarian sections.

The aim was to find out the indications of emergency caesarean section.

This descriptive type of cross-sectional observational study was conducted on 100 pregnant women who underwent emergency caesarean section in Gynae&Obs Department of Shaheed Suhrawardy Medical College Hospital between January 2013 to June 2013.

95% of the patients had single pregnancy, 73% of the patients had a gestational age between 37 to 40 weeks, in case of indication of emergency caesarean section 39% of the patients had history of previous caesarean section, 17 patients had prolonged first stage of labour and 8 patients had diabetes mellitus, in case of foetal outcome- 68% of the babies had no complications, 9% of the babies had perinatal asphyxia and 8% of the babies had neonatal jaundice.

This study shows that majority of the indications for emergency caesarean section were previous history of caesarean section, prolonged first stage of labour and pregnancy with diabetes mellitus.

Keywords: Indications; Emergency; Caesarean Section.

1. Introduction

Child birth is a universally celebrated event. Practically in every society, celebration of this is the dominant theme while the grimmer side of childbearing is often shrouded in silence, known only to those who suffer it and those who attend them.

The safe motherhood initiative is a global effort to reduce maternal mortality & morbidity and the aim of modern obstetrical practice is to achieve a healthy mother and healthy baby by proper management of obstetrical problems. Various procedures are developed in this regard; caesarean section is one of the important of those. This section is the frequently performed prime operation in obstetrics.

Modern obstetric cares include liberalized application of the caesarean section for foetal outcome. Antepartum & intrapartum monitoring can identify the foetus at risk who could be better served by abdominal delivery. Emergency caesarean section is done due to antepartum haemorrhage, impending eclampsia & eclampsia, prolong and obstructed labour, failed trial labour, failed induction of labour, failed forceps & ventouse.

The incidence of caesarean section varies from country to country, hospital to hospital and community to community.

Last 20 years, the rate of caesarean sections had increased steadily. Every operative procedure has its own hazards. Caesarean section is also not free from them. But the improved safety of surgery with modern anaesthetic techniques, availability of antibiotics, blood transfusion and intravenous fluid those have made caesarean section safer than they were. In emergency situation, caesarean section is done due to unforeseen complication arising either during pregnancy, during labor & acts as a life saving measure for both the mother and the foetus. So, it is necessary to bring all of these points in consideration along with the factors responsible for emergency caesarean section and outcome of this should be studied much more.

A natural phenomenon following conception uterine cavity is the safest environment for the fetus till term. But in certain circumstances, continuation of pregnancy upto term invites the life-threatening complications for the fetus or mother or both. The preterm termination brings greater benefit for mother and fetus. On the other hand, pregnancy itself may fail to proceed due to some reasons and come to a state of inevitable termination before term.

Caesarean section is an operative procedure whereby the fetus, placenta and membrane after the end of 28 weeks of gestation are delivered through an incision on the abdominal and uterine wall.

The risk of neonatal mortality and morbidity is more in preterm infants defined as those born between 32 to 36 weeks and post term pregnancy in emergency caesarean section.

The lower limit of gestation of preterm delivery has not been uniformly defined. In developed countries, it has been brought down to 20 weeks, whereas in the developing countries it is 28 weeks and according to the World Health Organization (WHO) it is 22 weeks⁽⁴⁾ deliveries, usually for pre-eclampsia, intra uterine growth retardation (IUGR) or maternal disease. The remainder are due to preterm labor and delivery.⁽³⁾

Most important risk factor for preterm delivery is low birth weight (LBW). Birth weight is a recognized indicator of survival and future prognosis of the new born baby⁽⁵⁾. LBW is probably the most important factor in perinatal death throughout the world.

Emergency caesarean section is often done for the safety of mother or foetus. But the result of emergency caesarean section is not same as elective caesarean section. Emergency caesarean section was found to be responsible for most of the foeto maternal morbidity & mortality. So, indication of caesarean section should be rational to reduce the foeto-maternal morbidity and mortality from caesarean section. The main objective of this study was to determine whether the indications of emergency caesarian section were justified and what were the foeto-maternal outcome in these emergency caesarian sections.

2. Materials & methods

This was a descriptive type of cross-sectional observational study on 100 pregnant women who were undergoing emergency caesarean section in Gynae&Obs Department of Shaheed Suhrawardy Medical College Hospital between January 2013 to June 2013. The study protocol was duly approved by the ethics committee of the institute and informed written consent was also obtained from the study subjects. The study subjects were selected purposively who fulfilled the selection criteria. Inclusion criteria included patients with stable general condition at that moment who would give the informed written consents and patients with Intra uterine death (IUD) and elective caesarean section were excluded. Socio-economic status of the mothers was determined by their own educational level, occupation and occupation of their husband and overall family income. Mother's or attendant's statements were the source of these information.

Educational status was defined as years of classroom education of the mother. Grading of education was done in four categories, as: **Illiterate:** No classroom education, **Primary:** Any classroom education below secondary school level, **Secondary:** Above secondary school level and below higher secondary school level, **Higher secondary:** Above higher secondary level but not graduate and post-graduate.

Occupation of the mother was recorded as housewife or service holder. Family income was classified on the basis of monthly average earning in Bangladeshi Taka. There were four categories: **Lower economic status:** less than 5,000 Taka, **Lower middle class:** 5,000-10,000 Taka, **Upper middle class:** 10,000-15,000 Taka. **Higher economic status:** more than 15,000 Taka.

Age was recorded as in nearest full year as stated by the pregnant women and was categorized as: Up to 20 years, 21-25 years, 26-30 years, 31-35 years, 36 years and above. Nutritional status included height, weight and Body Mass Index (BMI). Height was classified as: Below 145 cm, 145-150 cm, above 150 cm. Weight of the pregnant mother was measured in kilograms at the beginning of labour women in barefoot and light clothing. BMI was calculated with the following formula: Weight in kilogram/ Height in square meter. BMI less than 19 was considered as below average, BMI 19-24 was considered as average and BMI ≥ 24 was considered as more than average.

Antenatal check-up status was recorded from the statement of the pregnant women and was categorized as: Irregular if less than 4 antenatal check-up and Regular if at least 4 antenatal check-ups. Duration of the gestational period was determined by LMP and confirmed by early ultrasonography, when available. When not available, it was confirmed by LMP, examination findings and ultrasonography. Birth weight of newborn baby was taken in kilogram immediately after birth. There were two categories-Normal if birth weight is 2500 gm or more and Low if birth weight < 2500 gm. Bleeding from or into the genital tract after the 28th week of pregnancy, but before the birth of the baby was considered as an antepartum hemorrhage. Development of hypertension to the extent of 140/90 mm hg or more with proteinuria after the 20th week in a previously normotensive and non-protein uric patient was considered as pre-eclampsia. Polyhydramnios was considered where liquor amine exceeds 2000 ml. Spontaneous membranes rupture any time beyond the 28th week of pregnancy but immediate before the labor was considered as a premature membrane rupture.

After taking history with attention to particular aspects relevant to this study, clinical examination was done by the investigator or other doctors. Patients who were admitted few days before intervention with medical or obstetrical complications were treated accordingly. Antenatal fetal monitoring was done clinically. Gestational age was determined by history of last menstrual period and early USG finding. Ultrasonography was done whenever required. After delivery, condition and determinants of the baby were measured. Weight of the baby was taken by weighing machine (beambar scale).

3. Data analysis

All the data were entered into the template of Statistical Package for Social Science (SPSS, Inc, Chicago, IL, USA) version 23 after necessary screening. and both qualitative and quantitative analyses were performed accordingly.

Result

Table I shows that most of the women belonged to age group 21-25 years (35%), only 6% were <20 years and 4% were > 36 years age group. The mean (\pm SD) age of the women was 29.14 \pm 4.91 (range 18-42) years.

Table I: Age distribution of the patients (n=100)

Age (years)	Number of patients	Percentage
≤ 20	06	06
21-25	35	35
26-30	31	31
31-35	24	24
≥ 36	04	04

*Fig 1: Distribution of occupation of the respondents.*

Figure I show that 89 (89%) women were housewives, 11 (11%) were service holders.

Table II shows in this study, most of the patients belonged to lower class family 52 (52%), followed by lower middle economic family 27 (27%) and higher economic status only 04 (04%).

Table II: Socio-economic status of the patients (n=100)

Economic Status	Number of patients	Percentage
Lower economic status	52	52
Lower middle class	27	27
Upper middle class	17	17
Higher economic status	04	04

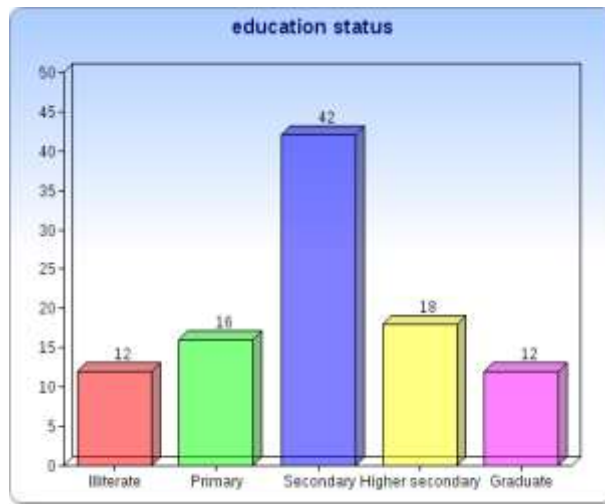


Fig 2: Distribution of the educational status of the patients

Figure 2 shows that most of the patients were educated (88%) and only 12% patients were illiterate. Table III shows that 61 (61%) women had average nutritional status, 29% malnourished and 10% were overweight.

Table III: Nutritional status of the patients (n=100)

Nutrition	Number of patients	Percentage
Average	61	61
Below average	29	29
More than average	10	10



Fig 3: Distribution of the study population by antenatal checkup

Figure 3 shows that 35 (35%) were on regular antenatal care, 53 (53%) had irregular and 12 (12%) had no ANC. Table IV shows that out of 100 women, 35 (35%) were primigravida, 31(31%) were 2nd gravid and the rest 34 (34%) were 3rd or more.

Table IV: Gravida status of the patients (n=100)

Gravida	Number of patients	Percentage
Primi gravid	35	35
2 nd gravida	31	31
3 rd or more	34	34

Table V shows 95% of the patients had single pregnancy and only 5% of the patients had twin pregnancy.

Table V: Pregnancy status of the patients (n=100)

Pregnancy	Number of patients	Percentage
Single	95	95
Twin	05	05

Table VI shows that most of the women undergo emergency caesarean section belonged to gestational age group 37-40 (73%) and gradually decreasing with advancing gestational age 41-42 weeks 12 (12%) and >42 weeks 04 (04%)

Table VI: Gestational age of the patients (n=100)

Gestational age (weeks)	Number of patients	Percentage
<37	11	11
37-40	73	73
41-42	12	12
>42	04	04

Table- VII shows common indications for caesarean section were H/O previous Caesarean section (39%) prolonged 1st stage with FD (17%) GDM (08%).

Table VII: Indication for emergency Caesarean section (n=100)

Indications	Number of patients	Percentage
H/O previous Caesarean section	39	39
2 Caesarean section	04	04
Prolonged 1 st stage with FD	17	17
Obstructed Labor	02	02
APH:		
Placenta praevia	02	02
Abruptio placenta	02	02
Multiple pregnancy	04	04
PIH	03	03
Severe	04	04
Eclampsia	01	01
Malpresentation	03	03
Transverse lie	01	01
Pg. with diabetes mellitus	08	08
Pg. with CPD	03	03
Pg. with Rh-ve	03	03
Pg. with BOH	03	03
Pg. with Cord prolapse	01	01

Table VIII shows that without any complications 68 (68%) and with complication 32 (32%) cases.

Table VIII: Distribution of the fatal outcome

Outcome	Number of patients	Percentage
Without any complication	68	68%
With Complications		
Prematurity	08	08
Perinatal Asphyxia	09	09
Neonatal jaundice	08	08
Congenital anomaly	01	01
Neonatal infection	05	05
Neonatal death	01	01

Table IX shows that in this study, 57 (57%) women had no post-delivery complication. Perioperative haemorrhage was seen in 8 (8%), wound infection in 3 (3%) and Headache 08% Post-operative rise of BP 05 (05%)

Table IX: Maternal morbidity and mortality (n=100)

Parameters	Number of patients	Percentage
Without any complications	57	57%
Perioperative hge	08	08%
Wound infection	03	03%
Puerperal pyrexia	12	12%
Anaemia		
Headache	07	07%
Post operative	08	08%
rise of BP	05	05%

4. Discussion

Caesarean section has become widely practiced and liberalized owing to the recent advance in anesthesia, surgical technique, strict aseptic precaution and blood transfusion facilities. The safe motherhood initiative is a global effort to reduce maternal mortality & morbidity and the aim of modern obstetrical practice is to achieve a healthy mother and healthy baby by proper management of obstetrical problems. Various procedures are developed in this regard; caesarean section is one of the important of those. Caesarean section plays an important role in this respect by reducing danger to the life of the mother or the child or both. Caesarean section is the most frequently performed major operation in obstetrics.⁷

Modern obstetric care has included the liberalized use of caesarean sections for the greater interest of foetal outcome. Monitoring on Antepartum & intrapartum can identify the condition of foetus if at risk which could be served better by abdominal delivery. Maternal indications are also responsible for emergency caesarean section such as antepartum hemorrhage, impending eclampsia& eclampsia, prolong and obstructed labour, failed trial labour, failed induction of labour, failed forceps & ventouse.¹²

The incidence of caesarean section varies from country to country, hospital to hospital and community to community.¹⁴

During the past 20 years, the rates of caesarean section had increased steadily. Every operative procedure has its own hazards. Caesarean section is not exception to this. The risk of maternal death from caesarean section is four to six times greater than that of vaginal delivery. But the improved safety of surgery with modern anesthetic techniques, availability of antibiotics, blood transfusion and intravenous fluid have made caesarean section safer than they were. In emergency situation, caesarean section is done due to unforeseen complication arising either during pregnancy, during labor, & it acts as a life saving measure for both the mother and the foetus. So, it is necessary to bring all of these points in consideration along with the factors responsible for emergency caesarean section and outcome of this should be studied much more.¹⁸

The incidence of caesarean section has been reported differently depending upon the type of hospital or teaching institute in the world.

There is no comprehensive and extensive study in our country as yet on caesarean section, though it is being increasingly employed in all hospitals and clinics.¹⁷

Hospitals in our country receive a good number of high-risk patients with inadequate or no antenatal care. In our study we included only emergency caesarean section cases. In some conditions, pregnancy cannot continue to term due to some unavoidable circumstances and for saving the life of the mother and/ or fetus, an interventional procedure, caesarean section has to be done.²¹

Age distributions of the mother of emergency caesarean section were found that more than half of the case belonged to age of 20-34 years group. These findings were similar to Petrous S; KupekE; Vause S and Maresh M, University of Oxford, U.K. In this study, also it was found that 4% of cases belonged to more than 35 years. This is similar to JollM et al, St Mary's Hospital, London. They had shown that pregnant women age 35-40 years old were at increased rate of gestational diabetics (OR= 2.63), placenta previa (1.37) and (OR= 1.37) and also emergency caesarean section (OR= 1.59). The age group is nearer 57% among 20-30 years with Tadesse E, Adane M, Ablyou M of East Afr med J and Banu RA & Rouf MA at different hospital & IPGMV & R Calcutta (87% in the age group of 20-30 years).²⁶

The most common indication for emergency caesarean section in our study are shows H/O previous Caesarean section (39%), prolonged 1st stage with FD (17%) GDM (08%). In our country, still now patient does not want trial labor with history of previous caesarean section due to non-recurrent indication. But in abroad, vaginal delivery is allowed after one caesarean section due to non-recurrent indications. This was studied by Cowan RK, Kinch RA, Ellis B, Anderson R at John peter Smith hospital, Texas.

They had shown that the success rate is very high (81%) in vaginal delivery after previous caesarean delivery and they suggested that a trial of labour after previous caesarean delivery is a desirable and safe after the through patient counseling. Similar findings (75% success rate of vaginal delivery after caesarean section) were also explored by Flamm BL, Goings JR, Liu Y, Wolde-jsadik G in the Kaiser permanent medical centers of Southern California. But they recommended that neither repeat caesarean delivery nor trial of labour is risk free.²⁸

In our study, most of the women were housewives (89%), most of the patients belonged to lower class family 52 (52%), followed by lower middle economic family 27 (27%) and higher economic status only 04 (04%) and three forth of the cases (70%) had been educated of SSC and below which is comparable with others study. This explains that lower socio-economic and educational conditions increase the emergency caesarean section operation. In this current study, the rate of emergency caesarean section is comparatively higher owing to lack of proper antenatal cares, illiteracy and low-level socio-economic status. It creates a good impression over the higher status, but as a matter of fact higher socio-economic and educational status favors the repeated and proper antenatal checkup which help to detect high risk mothers for special care and thus decreases the emergency caesarean section rates to prevent the maternal and infant deaths as well as their morbidities.

This study shows that 35 (35%) were on regular antenatal care, 53 (53%) had irregular and 12 (12%) had no ANC. This study proved that regular antenatal visits are related to the decrease of the emergency caesarean section. These findings are similar to the findings of Ratten GJ, McDonald L, royal Woosomens Hospital, Australia. They had found that repeated antenatal visits can lower the caesarean section rate than as usual care or other health facilities (8.3% compared with 18.5%) and also lower perinatal mortality rate (6.4 compared with 20.5 per thousand of live births).²⁹

The study shows that out of 100 women, 35 (35%) were primigravida, 31(31%) were 2nd gravid and the rest 34 (34%) were 3rd or more shows that most of the women undergo emergency caesarean section belonged to gestational age group 37-40 (73%) and gradually decreasing with advancing gestational age 41-42 weeks 12 (12%) and >42 weeks 04 (04%)

Regarding complications, this study showed that 57 (57%) women had no post-delivery complications. Among the complications, Preoperative HGE was seen in 8 (8%) which occurred from surgical incision and atony of the uterus and those cases were managed by proper hemostasis, blood transfusion and oxytocin drip during and after operation, wound infection in (3%). Begum A had studied wound infection after caesarean section among the admitted patients of Dhaka Medical College Hospital from August, 1988 to 1989. She got the rate of wound infection 35.5% among the total 300 cases. But William J et al has got the wound infection is only 1.54% and UTI 4.64% after caesarean section at Sioux Valley Hospital, South Dakota, which is much less than in our situation.

Complications such as- wound infections, febrile morbidity and endometritis could develop more after the emergency caesarean section in case of preoperative membrane rupture, prolonged duration of labour and repeated per vaginal examinations.

In this study, foetal outcome of emergency caesarean section is not so good. Here 32% of the baby developed complications & 68% were healthy. Among the complications, 8% developed neonatal, 8% were premature baby who were delivered due to maternal morbidity, 5% developed neonatal infection, 9% developed birth asphyxia, 1% were neonatal death, and congenital anomaly 1%. But as per the findings of this study, neonatal complications were higher with Dey N and hata SK at Calcutta. They found that the neonatal complications of 21.8% in emergency caesarean section and 15.5% in elective caesarean section.

In this study, most of the patients were discharged within 3rd post-operative day but some of the patients needed to stay in hospital for one week due to maternal and foetal complications. This is also found that the average duration of post caesarean stayed at many maternity hospitals is only for three to four days by Strong et-el Arizona California. It was also their experience that the vast majority of significant post caesarean complications occur in the first 48 hours after delivery.

5. Conclusion

In conclusion, this study shows majority of the indications for emergency caesarean section were previous history of caesarean section, prolonged first stage of labour and pregnancy with diabetes mellitus.

Few limitations of the study include certain information which were recorded as stated by the mothers or attendants, though some of these information may be misleading. The study was done in a short period of time on small number of patients. So, it does not represent the whole population.

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