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Original Research Article

## Maternal and fetal outcome in emergency versus elective caesarean section

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### ABSTRACT

**Background:** Caesarean section preferred as an emergency or elective procedure are entirely different entities according to measures taken, facilities and skilled staff available and preparation done. It has been shown that risk of surgical complications is greater with emergency compared with elective caesarean section.

**Methods:** Present study is a retrospective study, designed to evaluate maternal and fetal outcomes in elective versus emergency caesarean section performed at our hospital from January 2016 to December 2016.

**Results:** Out of 2156 caesarean, 1628 were emergency and 528 were elective caesarean section. In our study overall intra operative complications were 11.08% which was mainly contributed to emergency group.

**Conclusions:** The elective caesarean section shows less maternal and perinatal complications as compared to emergency caesarean sections. Increasing incidence of emergency caesarean section can be reduced by encouraging all pregnant females to visit antenatal clinics.

**Keywords:** Caesarean section, Fetal outcome, Maternal outcome

### INTRODUCTION

Caesarean section is defined as delivery of fetus, living or dead through an incision on abdominal and uterine wall. The definition does not include removal of fetus from abdominal cavity in case of rupture uterus or abdominal ectopic pregnancy.

Caesarean section has been shown to be a safe operation and in many countries around the world there has been dramatic increase in its frequency.<sup>1-4</sup> Many vaginal procedure, internal version, destructive operation and symphysiotomy have been things of past. with use of aseptic technique, proper sterilization method, antibiotic therapy, improved anaesthesia and use of blood transfusion, the mortality and morbidity of this surgery have decreased dramatically. In recent years, however use of caesarean section has become increasingly

controversial, uncertainty exists about relative risk and benefit of the patient.<sup>5</sup> The increased rate of caesarean section in present scenario is due to increasing maternal age, reduced parity, breech presentation, extensive use of electronic fetal monitoring.<sup>6</sup>

Present study is a retrospective study, designed to evaluate maternal and fetal outcomes in elective versus emergency caesarean section performed at our hospital.

### METHODS

All obstetric patients undergoing caesarean section (total no. 2156) from January 2016 to December 2016 at SRG Hospital, Jhalawar Medical college, jhalawar were included in study. Maternal data collected included age, parity, mode of previous delivery, whether booked or unbooked case, indication of previous caesarean section,

intra operative and postoperative complications and duration of hospital stay. Neonatal data includes sex, birth weight, one- and five-minute APGAR score, need for resuscitation, referred to neonatal intensive care unit (NICU), neonatal complications and duration of hospitalization. Case sheets of patients were traced from operation theatre registers. All data were entered in prestructured proforma. Data were analyzed by percentage method.

**Inclusion criteria**

- All obstetric patients undergoing caesarean section (total no. 2156) for one year.

**Exclusion criteria**

- Patients who underwent normal delivery.

The percentage method was used for analysis.

**RESULTS**

During study period 8967 cases were admitted in maternity ward, 2156 underwent caesarean section. The

incidence of caesarean section at our hospital comes out to be 24.04%. of these 1628 (75.5%) had emergency and 528 (24.5%) had elective operation. 1681 (78%) were in age group of 20-30 years. The youngest being 18-year-old and eldest was 40-year-old. 1789 (83%) patients were operated under spinal anaesthesia, out of them 1272 (71.10%) underwent emergency caesarean and 517 (28.89%) had elective caesarean.

General anaesthesia was given to 36 (1.66%) patients, 33 patient of this group had emergency caesarean and 3 had elective caesarean section. Commonest group delivered by caesarean section was para 1 and 2 i.e. 1724 (80%). Commonest indication for caesarean section was repeat caesarean (n=558- 25.88%).

Out of them 358 (64.15%) were operated under emergency circumstances and 200 (35.18%) were elective caesarean. Fetal distress was found to be cause in 388(17.9%) patient, Non-progress of labour in 324(15.20%), mal presentation in 247 (11.45%), antepartum haemorrhage in 142 (6.58%) and obstructed labour in 84 (3.89%) patients (Table 1).

**Table 1: Indications for caesarean section.**

Indications	Total	Emergency		Elective	
		No. Of patients	Percentage	No. Of patients	Percentage
Repeat caesarean	558	358	64.15	200	35.84
Malpresentation	247	161	65.18	86	34.81
Antepartum haemorrhage	142	101	71.12	41	28.87
Cephalopelvic disproportion	125	98	78.4	27	21.6
Fetal distress	388	388	100	0	
Preeclampsia	192	120	62.5	72	37.5
Eclampsia	96	96	100	0	
Obstructed labour	84	84	100	0	
Non-progress of labour	324	222	68.51	102	31.4

P fannensteil incision was given in 1510 (70%) patient, out of these 1132 (75%) patient were in emergency group and 378 (25%) patient were in elective group. 482 cases belonging to emergency group and 164 cases belonging to elective group received midline incision.

Midline incision was mainly given due to presence of previous midline scar. Intra operative complications were seen in 239 patients (11.08%).

Out of these 196 (82%) were operated as emergency cases and 43(17.99%) were operated as elective caesarean.

Among the complications postpartum haemorrhage was most common problem and was encountered in 135 out

of 239 cases. 108 of these cases were in emergency group (Table 2).

Wound infection was most common postoperative complication that was seen in 298 cases. Out of these 281cases were in emergency group.

**Table 2: Intra operative maternal complications.**

Complications	Total	Emergency	Elective
Haemorrhage	135	108	27
Extension of uterine incision	94	79	15
Bladder injury	5	4	1
Caesarean hystrectomy	5	5	0

Other complications were urinary tract infection, spinal headache. Caesarean hystrectomy was performed in 5 patients due to massive haemorrhage and uterine atony. There were total 3 maternal death (Table 3).

**Table 3: Postoperative maternal complications.**

Complications	Total	Emergency	Elective
Wound infection	298	281	17
Fever	162	116	46
Urinary tract infection	130	98	32
Spinal headache	21	12	9
DIC	11	10	1
Maternal death	3	3	0

Out of 2156 babies, 2102 (97.40%) were born alive, of these 1575 (73.05%) were of emergency group and 527 (24.44%) were in elective group. 2 babies in emergency group and 1 baby in elective group was still birth. 51 dead babies were delivered by emergency caesarean section. There were total 74 perinatal death. Perinatal mortality was 4.50% in emergency group and 0.56% in elective group.

## DISCUSSION

In the last decades, all over the world an increasing trend for caesarean section has been noted.<sup>2-4</sup> The incidence of caesarean section in our hospital during study period is 24.04%. Out of them 75.5% were emergency caesarean section and 24.5% were elective caesarean section. This rate is quite comparable to rate in western countries but does not reflect true caesarean section in given population. Our hospital being a tertiary referral centre receives complicated cases of catchment area.

McCarthy FP et al conducted a study in 2005 and reported caesarean section rate of 28.3% which is quite comparable to our study. In their study most, common indication for caesarean section was previous caesarean.<sup>7</sup>

In a study by Ali et al in 2005 repeat caesarean was most common reason for caesarean section (43.24%). In our study common indication were same in elective group but in emergency group the commonest reason for caesarean was repeat caesarean (25.88%) followed by fetal distress, non-progress of labour, malpresentation, antepartum haemorrhage, obstructed labour.<sup>8</sup> Maternal intra operative and postoperative complications were more common in emergency cases as compared to elective ones. In our study overall intra operative complications were 11.08% which was mainly contributed to emergency group. In a study by Nelison et al incidence of intra operative maternal complications was 11.6% which is comparable to our study.<sup>9</sup>

Among the intra operative complications massive haemorrhage was most common complication. In our study the incidence of postoperative complication was 13.82% which was mainly seen in emergency group. The

commonest complication encountered was wound infection. In a study by AL Mulhim et al more complications were encountered in cases who underwent emergency caesarean section, with fever being the commonest post-operative complication.<sup>10</sup>

Overall fetal mortality and morbidity were higher in emergency group. Fetal morbidity was 10.50% of this 85.38% cases were contributed by emergency group and 14.61% by elective group. The fetal demise was more in emergency group (Table 4).

**Table 4: Fetal complications observed during study.**

Complications	Total	Emergency	Elective
Respiratory distress	123	102	21
Meconium aspiration	19	16	3
Sepsis	29	28	1
Perinatal death	74	71	3

In a study by Ben Onankpa et al in 2009 the perinatal mortality was 11.11% among caesarean section, the main cause of death was severe birth asphyxia following prolonged obstructed labour.<sup>11</sup>

The conditions associated with poor fetal outcome in our study were prolonged obstructed labour, hypertensive disorders of pregnancy and cephalopelvic disproportion. The major cause of fetal morbidity was severe birth asphyxia, seen mainly in emergency group (Table 5).

**Table 5: Fetal outcome.**

Outcome	Emergency	Elective
Born alive	1575	527
Fresh stillbirth	2	1
Macerated dead baby	51	0
Early neonatal death	69	2

Babies born out of elective caesarean section had less frequent asphyxia and resuscitation than the babies of emergency group. Other studies have also reported similar facts.

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