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RESEARCH ARTICLE

MATERNAL AND FETAL OUTCOME IN EMERGENCY CAESAREAN SECTIONS IN WAD MEDANI OBSTETRICS AND GYNAECOLOGY HOSPITAL GEZIRA STATE-SUDAN

Albagir Mahdi Ahmed Hassan

Department of Obstetrics and Gynecology Umm Al-Qura University Makkah, Saudi Arabia.

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Abstract

Background: Caesarean section is among the commonest performing procedures worldwide. Its rate is steadily increasing, and its indications is expanding despite the increased morbidity and mortality over the vaginal delivery.

Objectives: The aim of this study is to study the maternal and fetal outcome of emergency caesarean section also the study aims to know the indications for the emergency caesarean sections.

Methods: A prospective descriptive study conducted in Wad Medani Teaching Hospital in the period June 20th, 2021, to September 20th, 2021, and included 100 patients who had emergency caesarean sections. All data collected about patients was included in a flow chart and analysed using SPSS (Statistical Package for Social Sciences) results were tabulated and presented in percentage forms.

Results: The study revealed that: the rate of Caesarean section in the hospital was 35% of which 63.4% were emergency CS and 46.6% were elective CS, emergency CS was common in the age group 18-34 years (82%). Emergency CS is common in primigravidae ladies (50%). Most common indications of emergency CS were Failure to progress, repeat CS, Hypertension, fetal distress and malpresentations. Intraoperative maternal complications such as anaesthetic complications were (23%), haemorrhage (26%). Postoperative maternal complications such as PPH were (14%), Sepsis (12%), wound infection (6%) and VTE (5%). Regarding the neonatal outcome in regard of APGAR score less than 7 at 5 were (12%) Other neonatal complications such as RDS (14%), birth asphyxia (7%).

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Introduction:-

Caesarean births are categorized as either primary (i.e., first caesarean delivery) or repeat (i.e., after a previous caesarean birth). The total caesarean delivery (CD) rate is the sum of these two components. CDs may be scheduled (no labour, elective, planned) or unscheduled (during labour, non-elective, unplanned) and are performed for both maternal and fetal indications .

CD accounted varies between 22.9 and 35% of births in the United States in 2020, the highest rate ever reported [1]. This rate is significantly higher than the 3 to 5 percent rate that was stable over several decades prior to 1970. The CD rate worldwide varies between the lowest rate recorded in South Sudan in 2010 (0,6%) and highest rate recorded

Corresponding Author:- Albagir Mahdi Ahmed Hassan

Address:- Department of Obstetrics and Gynecology Umm Al-Qura University Makkah,
Saudi Arabia.

in the Dominican Republic in 2014 (58.1%). As a result, this procedure has engendered considerable discussion regarding indications, technique, cost, complications, and long-term outcomes.

The CD had a long list of indications, the four most common indications which account for 70% of these deliveries are: Failure to progress in labour, none-reassuring fetal status (e.g. none reassuring antepartum fetal testing by none stress test, biophysical profile, fetal blood sampling, Doppler assessment, contraction stress test, fetal heart rate monitoring), Previous CD or hysterotomy (e.g., secondary to myomectomy or uterine surgery) and Fetal malpresentation (e.g. breech, transverse lie). Additional indications include Placenta praevia, maternal infections (HIV- Herpes simplex virus), some multiple gestations, some fetal anomalies (hydrocephalous, conjoined twins) and IUGR. Assessment of the mother and the fetus before the procedure is mandatory and these assessments include:

Assessment of fetal lung maturity which should be confirmed before a scheduled elective (none-emergent) delivery. This can be inferred by any one of several parameters: Achievement of 39 or more weeks of gestation. Amniocentesis for fetal pulmonary assessment.

In one large trial of women planning elective caesarean birth, the predicted probability of admission to a special care baby unit with respiratory problems at 37 weeks was 11.4 percent, at 38 weeks it was 6.2 percent, and at 39 weeks it was 1.5 percent [2]. These data underscore that waiting until 39 weeks of gestation for elective CD is the optimal approach.

Previous classical caesarean incision:

There is no consensus regarding the optimal timing of delivery in women with a previous classical caesarean incision. Intervention before 39 weeks of gestation is presumed to reduce the risk of spontaneous uterine rupture; however, early delivery can be associated with complications of prematurity. Furthermore, uterine rupture has been reported as early as the second trimester. The American College of Obstetricians and Gynaecologists and American Academy of Paediatricians publication "Guidelines for Perinatal Care" states that fetal maturity should be established prior to elective CD, although delivery by repeat caesarean is not completely "elective" after a previous classical incision. One group performed a decision analysis of the following four options: (1) delivery at 39 weeks of gestation, (2) delivery at 36 weeks of gestation without amniocentesis, (3) amniocentesis at 36 weeks of gestation with delivery if the fetus was mature and 48 hours after antenatal corticosteroids if the fetus was immature, and (4) weekly amniocentesis starting at 36 weeks of gestation with delivery upon fetal lung maturity [3]. The authors concluded that strategy (2) provided the lowest risk of a maternal-neonatal catastrophic outcome associated with uterine rupture. Although complications of prematurity at 36 weeks of gestation occur more frequently than uterine rupture, these complications are often minor and transient; therefore, not as detrimental to maternal-neonatal quality of life. Thus, this model showed no benefit of offering fetal lung maturity testing because it would lead, in cases of negative results, to further expectant management in a risky situation. This model needs to be explored further before current clinical recommendations are changed .

Anaesthesiology consultation:

As with any surgical procedure, all women undergoing CD need a preoperative anaesthesiology consultation. High-risk patients should have a preadmission consultation with an anaesthesiologist. Risk factors include, but are not limited to: massive obesity, asthma requiring medication, severe hypertensive disease, maternal coagulopathy, history of anaesthetic complications, severe facial or neck edema, extremely short stature, short neck, decreased mobility of the neck, difficulty in opening the mouth, protuberant teeth, anatomic abnormalities of the face, mouth, neck, or jaw and serious medical or obstetrical conditions

Maternal preparation:

The physiologic effects of pregnancy result in delayed gastric emptying, thus pregnant women are at increased risk of aspiration. The American Society of Anaesthesiologists recommends that patients abstain from solid food for at least six hours prior to elective CD. Clear liquids, which have a more rapid gastric transit time, may be ingested until two hours prior to surgery. An oral dose of a non-particulate antacid (e.g., sodium bicarbonate) is administered 30 minutes prior to surgery to reduce pulmonary morbidity should aspiration occur.

An intravenous line is placed and at least one liter of a balanced electrolyte solution infused before the administration of the anaesthetic. This will inhibit the effects of intravascular hypovolemia on uterine artery perfusion, which can have a deleterious effect upon the fetus.

Laboratory testing:

A baseline hemoglobin measurement is recommended in patients who are undergoing major surgery, such as CD, that is expected to result in significant blood loss. A normal value obtained within one month of surgery probably does not need to be repeated immediately preoperatively .

Blood bank:

All pregnant women should have had a blood type and antibody screen performed during the pregnancy. A study including over 23,000 women undergoing primary CD reported 3.2 percent were transfused a median of 2 units; over 33,000 women underwent repeat CD and 2.2 percent were transfused [4]. Characteristics associated with a greater than 10 percent prevalence of receiving a transfusion included general anaesthesia, placenta praevia, preoperative haematocrit less than 25 percent, eclampsia or HELLP syndrome, placental abruption, and a history of five or more CDs .

Those women at low risk of haemorrhagic complications and who do not have a known red blood cell antibody probably do not require a routine type and screen repeated preoperatively [5,6]. In one study, as an example, the need for a perioperative blood product transfusion was directly associated with specific conditions such as placental abnormalities (eg, praevia, accreta, or abruption), the presence of HELLP syndrome (i.e., Hemolysis, Elevated Liver function tests, Low Platelets), or preoperative Anemia [5]. The frequency of transfusion in patients who did not have one of these known conditions was less than 1 percent. Another study reported an overall blood transfusion rate of 0.8 percent in patients undergoing CD without a previously identified risk factor [6]. The surgeon may consider a "hold clot" order in low-risk patients: blood is drawn and held, but the test is not performed unless clinically indicated .

Antibiotic prophylaxis:

A Cochrane review of 66 trials examined the effect of prophylactic antibiotics for elective and nonelective CD [7]. Use of antibiotic prophylaxis substantially reduced the incidence of postoperative fever, endometritis, wound infection, urinary tract infection, and serious infection. The relative risk (RR) of endometritis was reduced by more than two-thirds across all groups and patient populations: after elective CD, nonelective CD, and for all patients (RR = 0.24, 0.30, and 0.29 respectively).

Another such review found ampicillin (2 g IV) and first generation cephalosporins (cefazolin 1 g IV) were similarly effective in reducing postoperative endometritis, with no added benefit from utilizing a multiple dose regimen [8].

Finally, a randomized study administered seven antibiotics in 10 different prophylactic regimens to 1580 patients who underwent CD [9]. Four antibiotics were superior to cefazolin (1 g) in preventing postpartum endometritis: ampicillin (2 g), cefazolin (2 g), and piperacillin (4 g) .

The optimal timing of administration (preoperative versus immediately after the cord is clamped) has not been studied extensively. It appears that administration after cord clamping is as effective as preoperative infusion

In summary, a single dose of a narrow spectrum antibiotic (e.g., ampicillin 2 g, cefazolin 2 g, cefotetan 1 g, or cefoxitin 1 to 2 g IV) immediately after cord clamping is recommended for infection prophylaxis in all women undergoing CD [10]

Emergency caesarean delivery:

One-half to 1 percent of deliveries require emergency intervention [11]. The American College of Obstetricians and Gynaecologists has maintained that a facility providing obstetric services should be capable of beginning an emergency CD within 30 minutes of the decision to perform the operation [12,13,14]. This criterion is based upon the practical constraints most rural hospitals face in assembling the appropriate team of nurses, anaesthetists, and surgeons. However, this threshold is not evidence-based, universally achievable, or ideal, from the perspective of decreasing perinatal mortality and morbidity [11].

Audits of deliveries from two areas of England found that the 30-minute goal was achieved in only two of three deliveries and questioned the utility of this standard [11], which was based on expert opinion (level III evidence). A subsequent national cross-sectional survey of maternity units in England and Wales found that the 30-minute goal was achieved in 46 percent of deliveries deemed to have an "immediate threat to life of the woman or fetus" and

only 22 percent of all emergency caesarean births [15]. The difficulty in achieving the 30-minute goal was confirmed by a literature review that reported a decision to delivery interval of 30 minutes was achieved in only 52 to 78 percent patients. Subsequently, a study by the Maternal-Fetal Medicine Units Network (MFMUN) reported 65 percent (1814 of 2808) of primary CDs performed for emergency indications were begun within 30 minutes of the decision to operate [18]. The ability to begin an emergency CD within 30 minutes of the decision to operate is a reasonable benchmark for monitoring the quality of labour and delivery units. However, sudden complete anoxia, such as occurs with a total abruption or complete cord occlusion, probably necessitates delivery within five minutes to avoid fetal hypoxic injury, although intact survivors have been reported after longer durations of severe hypoxia. Most pregnancies with less severe fetal or maternal compromise will have good outcomes despite longer intervals before initiating surgery. As an example, one study showed the average times to acidosis associated with late and variable decelerations in a term fetus with an initially normal tracing were 115 and 145 minutes, respectively [19]. The national survey discussed above found that babies delivered within 15 minutes of the decision to operate had similar outcomes to those delivered within 16 to 75 minutes; however, there was an increased risk of Apgar <7 at five minutes after a 75-minute interval [16]. The MFMUN reported worse outcomes with delivery at less than or equal to 30 minutes and good outcomes in 95 percent of infants delivered after 30 minutes showing that rapid delivery does not always prevent neonatal morbidity/mortality and that delivery at 31 minutes or more generally does not compromise the infant [18].

Potential risks of emergency CD include anaesthetic complications from rapid administration of general anaesthesia, haemorrhage in women with disseminated intravascular coagulation, and accidental injury to the fetus or abdominopelvic organs .

Postoperative care:

In the immediate postoperative period, the patient is observed for evidence of uterine atony, excessive vaginal bleeding, incisional haemorrhage, or oliguria, and provided with adequate analgesia. Patient controlled opioid analgesia followed by oral nonsteroidal anti-inflammatory drugs work well for most women. The mother can be instructed in ways to hold her new born to avoid contact with the incision; lying on her side or a football hold may be used, or a pillow may be placed over the incision and under the infant so the direct contact with the incision is minimized.

Early ambulation (when the effects of anesthesia have abated) and oral intake (within 4 to 8 hours of surgery) are encouraged [19]; both enhance the return of bowel function by stimulating the gastrocolic reflex. The usual drugs/procedures associated with caesarean birth are not a contraindication to breast feeding. Routine postoperative hemoglobin testing is not required as it does not appear to improve outcome in asymptomatic patients after CD [20] .

Studies attempting to evaluate maternal psychological outcomes after vaginal versus planned and unplanned caesarean birth have reported that women who deliver by caesarean express less satisfaction with their birth experience, are less likely to breast feed, and take longer before their first interaction with their new-born[21]. These differences are likely related, at least in part, to the anxiety associated with medical and obstetrical complications necessitating abdominal delivery and the stress, pain, and fatigue associated with major surgery. Improved psychological outcomes may be realized by realistic preparation for childbirth and attention to the specific needs of the woman who is both postpartum and postoperative .

Complications:

The major complications related to CD are infection, haemorrhage, injury to pelvic organs, and thromboembolic disorders .

Infection:

The mean risk of a postoperative endomyometritis after CD is 35 to 40 percent in the absence of prophylactic antibiotics [22]. This rate is as low as 4 to 5 percent after scheduled delivery with intact membranes and as high as 85 percent after an extended labour with ruptured membranes[23]. Prophylactic antibiotics reduce the overall rate of infection by approximately 60 percent [8].

Patients who develop chorioamnionitis prior to CD should have antibiotics initiated expeditiously and have traditionally continued them until the patient has been afebrile for 24 to 48 hours, although a single postpartum dose may also be effective. Oral antibiotic therapy is not necessary after successful parenteral treatment unless

bacteraemia is present. Women who develop a new post-operative fever should be evaluated for the source of fever, although a pelvic or wound infection is the most likely etiology. Appropriate antibiotics should be administered, typically gentamicin and clindamycin.

Wound infection occurs after 2.5 to 16 percent of caesarean deliveries[24], generally four to seven days postoperatively. Early wound infections (in the first 24 to 48 hours) are usually due to group A or B beta-haemolytic streptococcus and are characterized by high fever and cellulitis. Later infection can be due to Staphylococcus epidermidis or aureus, Escherichia coli, Proteus mirabilis, and cervicovaginal flora .

Initial treatment consists of opening the wound to allow drainage, cleansing with irrigation, sharp debridement as needed, placement of wet-to-dry packs, and close attention to subsequent wound care.

Haemorrhage:

The risk of extensive uterine injury or extension of the incision into the uterine vessels is usually low; only 1 to 2 percent of all patients having caesarean deliveries require blood transfusion[25]. Haemorrhage may be due to uterine atony, placenta accreta, or lacerated vessels. Lacerations extending into the lateral vagina and broad ligament should be evaluated carefully and repaired with meticulous attention to the position of the ureter.

Urinary tract or bowel injury:

Urinary and gastrointestinal tract injuries are uncommon, occurring in fewer than 1 percent of surgeries[26]. The incidence of bladder injury in a series of almost 15,000 caesarean deliveries was 0.28 percent (incidence in primary and repeat caesareans: 0.14 and 0.56 percent, respectively)[27]. Ureteric injury is rare, less than 0.1 percent[28].

Risk factors include scarring from previous pelvic surgery, emergency CD, and caesarean hysterectomy. The occurrence of bladder injuries can be minimized by continuous bladder drainage during surgery, careful palpation of the bladder, assuring transparency of the parietal peritoneum before cutting, and employing meticulous sharp dissection of the bladder base off the uterus .

Thromboembolic disease:

The leading cause of maternal mortality associated with CD is deep venous thrombus (DVT) formation leading to pulmonary embolus. This risk was illustrated by two large studies: In one study involving 395,335 women with live births, the incidence of DVT (178 per 100,000 births) was approximately fourfold higher after CD compared with other methods[29]. In another series of 268,525 births over an 11-year period, pulmonary embolus (but not DVT) was strongly associated with caesarean birth (19 of 36,470 caesareans compared to 4 of 232,032 vaginal deliveries)[30].

Preventive measures include use of intermittent leg compression, early ambulation, and anticoagulation in high-risk women.

Maternal mortality:

Maternal mortality after CD is higher than after vaginal delivery. However, surgical morbidity and mortality are often related to underlying factors that necessitated the CD in the first place [31]. The risk of maternal mortality from elective CD is very low and similar to that with vaginal delivery [32]. The risk of mortality in a nonelective caesarean birth is higher and related, in part, to the preoperative medical and obstetrical condition of the patient; some CDs are even performed perimortem.

Anaesthesia related mortality:

The case fatality rate associated with general anaesthesia is higher than with regional techniques, estimated at 32 and 1.9 per million live births, respectively [33]

Fetal and neonatal risks:

Although the procedure is usually performed for the benefit of the fetus, there are also fetal risks from caesarean birth. These risks include iatrogenic prematurity and birth trauma; the latter occurs in 0.4 to 3 percent of caesarean deliveries and consists mostly of mild lacerations related to emergency delivery.

Transient tachypnoea of the newborn (TTN) is more common after elective caesarean birth because mechanisms to reabsorb lung fluid have not been initiated. In a review of 29,669 deliveries, the incidence of TTN was about three times higher after elective caesarean than after vaginal delivery (3.1 versus 1.1 percent) [34]. CD has also been reported to be a modest risk factor for respiratory distress syndrome (RDS), particularly if the CD was performed in a non-labouring patient [35]. However, this study did not clearly discriminate between TTN and RDS.

Long-term risks: Abnormal placentation:

There is increasing evidence that CD increases the risk of abnormal placentation in future pregnancies. Stillbirth: A retrospective cohort study using Scottish national registry data found that CD significantly increased the risk of unexplained stillbirth in the subsequent pregnancy, becoming evident at 34 weeks of gestation [36]. Vaginal birth after caesarean section: After a CD, it is the responsibility of the delivering obstetrician to discuss with the patient the type of uterine incision made and the feasibility of a trial of labour in a future pregnancy. This information should also be documented in the operative note. Most patients who have had one prior low-transverse CD are eligible for a trial of labour in a future pregnancy: 60 to 80 percent result in successful vaginal birth [37]. Maximum number of CD: There are insufficient data on which to base recommendations for the maximum "safe" number of caesarean deliveries [38].

Objectives: -

To identify maternal and fetal complication in emergency caesarean section, to determine the main complications – maternal and fetal- in which emergency caesarean section is a risk factor and to identify the indications of caesarean section.

Study area design:

This is a prospective descriptive comparative study conducted in Wad Medani Teaching Hospital and during the period June 20th, 2021, to September 20th, 2021. The study included 100 patients who had emergency caesarean sections.

Inclusion criteria:

100 women undergoing emergency caesarean section during the period of the study were included.

Ethical approval:

Written permission was obtained from the administrative authority of Wad Madani maternity teaching hospital, Wad Madani, Gezira state, Sudan and from the study participants

Data collection:

The data of the study was collected by interview using comprehensive structured close ended questionnaire. The data collection tools covered all variables regarding the demographical, clinical/obstetrical characteristics, and maternal/fetal outcome data for all participants enrolled in the study.

Data analysis:

Data was processed and analysed using SPSS and presented in tables

Results:-

The incidence of caesarean section in the hospital was 35% of which 63.4% were emergency caesarean section and 35.6% were elective one. One hundred women underwent emergency Caesarean section. the majority of patients emergency caesarean section (82%) fall in the age group 18-34 years, and 17% of those who had emergency caesarean section fall in the age group > 34 years. table (1).

Maternal Age	No (%)
< 18 years	1 (1%)
18 - 34 years	82 (82%)
> 34 years	17 (17%)
Total	100 (100%)

Table (1):- Distribution of cases according to the maternal age

Sixty one percent of the patients were from rural areas while 31% were from urban area. Table (2).

Residence	No (%)
Urban	31 (31%)
Rural	69 (69%)
Total	100 (100%)

Table (2):- Distribution of cases according to their residence.

50% of patients underwent emergency section were in primigravida, 33% had a parity between 2-4 and 17% of were grand multiparas. Table (3)

Parity	No (%)
PG	50 (50%)
2 – 4	33 (33%)
5 or more	17 (17%)
Total	100 (100%)

Table (3):- Distribution of cases according to the parity

70% of emergency caesarean sections were between 37-41 weeks, 19% of those who had emergency caesarean sections were preterm and 10% of patients were post term. Table(4).

Gestational age	No (%)
28 -36+6Weeks	19 (19%)
37-40+10Weeks	71 (71%)
> 41+3 Weeks	10 (10%)
Total	100 (100%)

Table (4):- Distribution of cases according to the gestational age.

Regarding antenatal follow up our study showed that 56% of patients who had emergency caesarean section had 3 or more antenatal care visit while 38% didn't attend any prenatal clinics and the rest (6%) had only 1 or 2 visits. Table (5)

ANC visits	No (%)
0	38 (38%)
1-2	6 (6%)
3 or more	56 (56%)
Total	100 (100%)

Table (5):- Distribution of cases according to antenatal care visits.

Only 5 patients (5%) had antenatal medical condition, 2% had hypertension, 2% had Diabetes mellitus and 1% had history of bronchial asthma. Table (6)

Previous Medical illness	No (%)
Hypertension	2 (2%)
DM	1 (1%)
Bronchial asthma	2 (2%)
Total	100 (100%)

Table (6):- Distribution of cases according to the past medical history.

Regarding the fetal lie prior the operation, most of the fetuses in emergency caesarean section (99%) had longitudinal lie of the baby. Table (7). Cephalic presentation was 89% of the cases and 11% were breech. Table (8)

fetal Lie	No (%)
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longitudinal	99 (99%)
Transverse	1 (1%)
Total	100 (100%)

Table (7):- Distribution of cases according to the fetal lie.

Presentation	No (%)
Cephalic	89 (89%)
Breech	11 (11%)
Total	100 (100%)

Table (8):- Distribution of cases according to fetal presentation.

Regarding indication for CS, Table (9) shows the indications for emergency caesarean section, were: failure to progress (33%), repeat CS (21%), hypertensive disorders (10%), fetal distress (12%), placenta praevia (3%) and placental abruption (1%).

Indication	No (%)
Repeated C/S	21 (21%)
Placenta praevia	6 (3%)
Failure to progress	33 (33%)
Fetal distress	12 (12%)
Malpresentation	6 (6%)
Abnormal Lie	1 (1%)
Hypertension	10 (10%)
Placental Abruption	1 (1%)
Failure of induction	3 (3%)
Failure of VBAC	3 (3%)
Others	4 (4%)
Total	100 (100%)

Table (9):- Distribution of cases according to indications.

(84%) of the operation were done under spinal anaesthesia. While 16% had general anaesthesia. Table (10)

Type of anaesthesia	No (%)
Spinal	84 (84%)
General	16 (16%)
Total	100 (100%)

Table (10):- Distribution of cases according to the type of anaesthesia.

Regarding skin incision the transverse incision account in (76%) of cases and (24%) had midline longitudinal skin incision. Table (11) and lower uterine segment was done in 99% of the cases. Table (12)

Skin incision	No (%)
Transverse	76 (76%)
Vertical	24 (24%)
Total	100 (100%)

Table (11):- Distribution of cases according to the skin incision.

Uterine incision	No (%)
Lower segment	99 (99%)
Upper segment	1 (1%)
Total	100 (100%)

Table (12):- Distribution of cases according to the uterine incision.

Regarding the duration of the procedure (75%) of operations took less than 60 minutes, 23% took between 60-119 minutes and 2% of operations took more than 120 minutes. Table (13)

Duration of procedure	No (%)
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<60 min	75 (75%)
60 - 119 min	23 (23%)
> 119 min	2 (2%)
Total	100 (100%)

Table (13):- Distribution of cases according to the duration of the procedure.

Sixty patients had intraoperative complications. The most common was intra operative bleeding 26%, anaesthetic complications 23%, uterine lacerations (10%). One patient had bladder injury. Of these complications (19%) of patients who had blood transfusion Table (14)

Intra operative complication	No (%)
Anaesthetic	3 (3%)
Haemorrhage	26 (26%)
Uterine laceration	10 (10%)
Bladder injury	1 (1%)
Blood transfusion for those who had complications	19 (19%)
Total	40 (40%)

Table (14):- Distribution of cases according to intra operative complications.

Regarding postoperative complications, postoperative bleeding was 14% in, postoperative sepsis was 12%, postoperative wound infection was 6%, postoperative thromboembolism were 5%, postoperative spinal headache was 19%, postoperative psychiatric complications were 1% and failure of lactation were 5%. Table (15)

Post operative complications	No (%)
Post Operative Bleeding	14 (14%)
Post Operative Sepsis	12 (12%)
Post Operative Wound infection	6 (6%)
Post Operative Thromboembolism	5 (5%)
Post Operative Spinal headache	19 (19%)
Post Operative Psychosis	1 (1%)
Failure of lactation	5 (5%)
Total	62 (62%)

Table (15):- Distribution of cases according to the postoperative complications.

Regarding neonatal APGAR score in 5 minutes the study showed 12% of neonates borne by emergency caesarean sections had APGAR score less than 7. Table (16)

APGAR score in 5 min	No (%)
<7	15 (15%)
>7	85 (88%)
Total	100 (100%)

Table (16):- Distribution of cases according to neonatal APGAR score.

Thirty nine percent of the neonate needed resuscitation after delivery, 26% of neonates needed oxygen for resuscitation, while 13% needed cardiac massage. Table (17)

Need for resuscitation	No (%)
Oxygen	26 (26%)
Cardiac massage	13 (13%)
Total	39 (39%)

Table (17):- Distribution of cases according to neonatal need for resuscitation.

Regarding neonatal complications study showed that 14% of neonates born by emergency section had RDS, 7% had birth asphyxia, 8% had sepsis and 7% meconium aspiration. Table (18)

Neonatal complication	No (%)
RDS	14 (14%)
Birth asphyxia	7 (7%)
Sepsis	8 (8%)
Meconium aspiration	7 (7%)
Failure of Breastfeeding	1 (1%)
IUGR	3 (3%)
Total	39 (39%)

Table (18):- Distribution of cases according to neonatal complications.

Regarding the duration of the stay following emergency caesarean section, 82% of the patients stayed less than 8 days while 12% of the patients needed to stay for longer than 8 days. Table (19).

Duration of stay	No (%)
< 8 days	82 (82%)
> 8 days	18 (18%)
Total	100 (100%)

Table (19):- Distribution of cases according to post-operative hospital stay.

Upon discharge 99% of the patients were discharged in a good condition with unfortunate 1 patient died. Table (20)

Status of mothers on discharge	No (%)
Well	99 (99%)
Died	1 (1%)
Total	100 (100%)

Table (20):- Distribution of cases according to status of the mothers upon discharge.

Neonatal status at discharge, 96% discharged in a good condition, 3% died and 1% referred to a tertiary centre. Table (21)

Status of neonates on discharge	No (%)
Well	96 (99%)
Died	3 (3%)
Referred	1 (1%)
Total	100 (100%)

Table (20):- Distribution of cases according to status of the neonates upon discharge.

Discussion:-

Caesarean section has been progressively increased over the past decades, the rate of caesarean section in our hospital was 35%, 63.4% of them were emergency and 35.6% were elective. This rate is quite high if compared to a study of Mc Carthy FP et al conducted in 2005 and reported caesarean section rate of 28.3%. (39) Our higher rate might be attributed to the fact that our hospital is a referral hospital who received complicated cases that have been referred from different hospital in the region.

In a study by Ali et al in 2005 repeat caesarean was most common reason for caesarean section (43.24%), in our study failure of progression of labour was the most common cause for caesarean section (33%) followed by repeat caesarean section (21%), fetal distress (12%), hypertension (10%). (40)

In our study, haemorrhage was the most common intraoperative complication (26%), followed by uterine laceration (10%), anaesthetic complications (3%) and bladder injury (1%) is comparable to 25% in study done in 2018 by of Sonal Agrawal. (41)

Postoperative spinal headache was the most common postoperative complications in our study (19%) followed by haemorrhage (14%), fever (12%) compared to 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 (42)

Maternal mortality in our study was 1% due to haemorrhage compared to 0.8% in study of Megafu U. (43)

Perinatal mortality in our study was 3% mainly due to birth asphyxia compared to 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. (44)

Conclusion And Recommendations:-

caesarean section rate is progressively increasing and its indication widely expanding despite its significant maternal and neonatal risks. Emergency caesarean section carried an increased maternal and neonatal complications which an extra effort to reduce those complications, which necessitate proper patient prenatal care and continuous health care training and education and well-prepared health care facilities.

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