



INCREASING TREND IN CAESARIAN SECTION RATE –THE NEED FOR CLINICAL EVALUATION OF LOW RISK AND HIGH RISK INDICATIONS

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ABSTRACT

The incidence of caesarean sections is rising throughout the globe. Identification of a high risk pregnancy by cooplend score helps the obstetrician to identify patient at high risk and also elaborate a prognosis of pregnancy. The present study was conducted to evaluate maternal and perinatal outcomes in high and low risk pregnancies.: In the present study of 100 cases of high risk caesarean section were evaluated and compared with 100 cases of low risk caesarean sections over a period of two years. The results were analyzed in context of the goals set under the safe motherhood initiative. In the study period 4903 patients delivered and 1380 (28.11%) underwent caesarean section. The incidence of CS varied from 26.61% to 57%. Maximum number of patients in both high & low risk group 96% & 98% were in the age group of 17-35 years. 80% in the study group and 70% in control group had adequate pelvis, while 4% and 6% respectively had inadequate pelvis. 24% cases in the study group and 28% cases in the control group had past history of previous section. Most common associated medical disorder in both the groups was anaemia 28%, 20% respectively. 68% cases in the study group and 22% cases in the control group presented with obstetric complication. 62% cases of the high risk group and 14% cases of the low risk group had intraoperative complications in the form of adhesions, scar dehiscence, PPH, bleeding. 50% cases in the study group and 10% in the control group had postoperative maternal morbidity like pyrexia, UTI, paralytic ileus, wound sepsis, pulmonary edema, DIC, CCF and HELLP syndrome. In high risk group 2% neonatal death, while these figure was 0% in control group. 42% babies in the high risk group and 12% babies in the low risk group had perinatal morbidity in the form of low birth weight, prematurity, respiratory distress syndrome and birth asphyxia. There was no maternal mortality reported in high risk and low risk groups. Since there are many complications associated with caesarian section both for the mother and the baby, we have to judiciously select the cases for surgery especially in a primigravida.

INTRODUCTION

Pregnancy is a time of unparalleled joy and expectations. Most pregnancies have a healthy outcome but for others pregnancy can be times of intense fear and uncertainty. High risk pregnancy is defined as a pregnancy in which there is or will be an increased risk of morbidity or mortality for mother, fetus and neonate. There are also some health problems which may crop up during pregnancy like – preeclampsia and eclampsia, hemorrhage,

infections, gestational diabetes and clotting disorders. Several fetal complications may be encountered like IUGR, multiple gestation, congenital abnormalities. Identification of a high risk pregnancy by cooplend score. It is modification of high risk scoring system. Proposed by cooplend et al in 1977. It helps the obstetrician not only to identify pregnant patient at high risk but also elaborate a prognosis for the out come of pregnancy [1,2].



The incidence of caesarean sections is rising in many parts of the world. The incidence in the United States increased from 5% in 1970 to 27.5% in 2003. In the present era, there is liberalization of caesarean section particularly keeping the view of safe motherhood, small family norms and decreasing the perinatal mortality and morbidity in an attempt to have satisfactory outcome in the high risk cases. The standard indications for caesarean section like previous caesarean section, surgeries like myomectomy, Strassman operation, CPD, malpresentation, urinary dysfunction, cervical dystocia, tumors obstructing the birth canal, non-progress of labour, prolapsed cord, placental insufficiency, failed induction, failed forceps, PIH, PROM, elderly primi, Rh sensitization, invasive carcinoma cervix, previous vaginoplasty or vesicovaginal fistula repair and herpes genitalis.

The newer indications for caesarean births are primi breech with estimated baby weight less than 2 kg or more than 3.5 kg, macrosomia (fetal weight more than 4 kg), severe PIH with unripe cervix, multiple gestation, fetal distress as indicated by adverse FHR pattern and acid-base balance, fetal anomalies diagnosed by ultrasound, conjoint twins, gastroschisis, and selected cases of hydrocephalus and maternal cerebral aneurysm [3]. The present study is conducted to evaluate maternal and perinatal outcomes in both high and low risk pregnancies.

The reasons for Rising Rates of Caesarean Section^[3] are an increasing number of repeat caesarean sections, Increasingly frequent diagnosis of fetal distress on electronic fetal heart rate monitoring, Increased use of caesarean section for breech and preeclampsia, Frequent resort to elective caesarean section in high risk situations like elderly primi, previous caesarean section, maternal diabetes, PIH with placental insufficiency, IUGR, postdatism, previous unexplained fetal losses, CPD, malpresentations and to prevent vertical transmission of maternal infection to the fetus as in HIV infection and genital herpes, To deliver very small premature babies, when vaginal delivery is considered stressful, In selected cases of antepartum hemorrhage like major degrees of placenta previa and accidental hemorrhage when the baby is mature and alive, To avoid malpractice suit for alleged malpractice, To avoid difficult manipulative or instrumental vaginal deliveries which carry higher risks of morbidity, Patient / doctor convenience / demand caesarean section (Women's choice). The incidence of high risk pregnancy varies according to the criteria used to define it. A great many factors are involved and the effects of any given factor differ from patient to patient [4].

Strategies to reduce the CS rate are the indication of each CS as an optimal mode of delivery should be critically examined. The obstetrician is under an obligation to share the evidence along with the pregnant women and her attendants that CS is the optimal mode of delivery [5]. The strategies to change delivery pattern should be aimed at both high and low risk women [6].

Aims and Objectives

1. To study the incidence of low risk and high risk LSCS.
2. Evaluation of high risk caesarean section in terms of maternal and perinatal outcome, emergency and elective LSCS and intraoperative complications.

MATERIALS AND METHODS

The present study was a clinical evaluation of 100 high risk (study group) and 100 low risk (control group) caesarean cases with maternal, perinatal outcome in the Department of Obstetrics & Gynaecology at Mamata General Hospital, Khammam. The study was done for a period of two years. Pre-operative planning: On admission history of the patient was taken regarding her age, address and occupation, menstrual history obstetrical history was taken regarding gravity, parity abortion, number of term & preterm labours, any history of previous CS, indication (Medical, Surgical, Obstetrical & Gynecological), intra-operative complication, Blood transfusion post-operative complication healing of the scar, duration of stay in the hospital, clinical examination & systemic examination was done. Dating confirmed in all the cases. The cases under study included booked and unbooked admission. The booked cases in general had minimum of two antenatal checkups.

The study was carried out by collecting detailed history and information on the following proforma by interrogating the cases and / or the attendants. Scoring of the patients (low risk and high risk cases) was done by modified Cooplant's Scoring System [1,2]. Preliminary investigation like Hb gms %, Blood grouping & typing, RBS, Urine for sugar, albumin & microscopy, HIV, HBs Ag, VDRL was routinely done in each case ultrasound examination was done in all book cases. Compatible blood transfusion was given in severely anemic patient during or after surgery. Soap water enema and preparation of parts was done in all elective cases. Prophylactic antibiotic, antiemetic, antacid was given in all cases. Caesarean section consent taken. Intra operative planning : Majority of patients underwent emergency section. Majority patients underwent lower segment cesarean section. Blood transfusion intra operatively given in some patients. Some patients had intra operative complication. Post-operative planning: Breast feeding was stated after 4 hours of cesarean section, some patients received blood transfusion. Some patients had post operative complication, duration of stay, need for intensive care, neonatal complication and perinatal outcome as mentioned in the proforma. And finally the observation in both groups were compared using χ^2 , Z value, P values calculated P value of <0.05 was taken to be statistically significant.

RESULTS

During the last 8 years, the incidence of caesarean section in our institute varied from minimum of 26.61% to the maximum of 57%.



The incidence gradually decreasing from year 2003 (45%) to year 2006 (26%) but again has increase gradually to reach 28% during the period of study .Booked and unbooked: 36% of the cases in the High risk (study group) and 77% in the Low risk (control group) were booked. Age Distribution: In the present study, 96% cases in the high risk (study group) group and 98% cases in the low risk group (control group) were between the age group of 17-35 years. $Z = 0.415$, $P = 0.678$. Socioeconomic status: 82% and 86% belonged to the low scioeconomic group in the study and control group respectively. $Z=0.579$, $P=0.563$.Urban and rural cases: 38% and 64% in the study and control groups respectively were patients from the urban area and rest were from the rural background. $Z = 3.563$, $P < 0.001$, highly Significant Parity distribution: In the study group there were 42% primigravida, 56% multigravida and 2% grandmultipara, while in the control group respective figures were 46%, 52% and 2%. $\chi^2 = 0.330$, $P=0.848$.Fetal Lie: 98% and 100% of the cases from both study and Control group respectively had longitudinal lie of the fetus, rest were transverse lie. $\chi^2 = 0.505$, $P = 0.477$.Pelvis assessment:80% in the study group and 70% in the control Group had adequate pelvis, while 4% and 6% respectively had inadequate pelvis and rest were borderline cases in both the groups. $\chi^2=0.533$, $P=0.766$.Status of caesarean Section: 76% and 72% in both study and control group respectively had primary Caesarean section showing increase in the number of Primary caesarean sections $Z= 0.484$, $P=0.629$.Medical disorders in pregnancy : Most common associated medical disorder in the study group and control group was anaemia – 28% and 20% respectively. Other medical disorders seen in our series were heart disease, asthma and diabetes mellitus which were present only in high risk group. Prevalence of anemia:78.57% and 90% in both study and control group respectively had mild anemia, while 21.43% and 10% respectively had moderate to severe anemia. $Z = 0.655$, $P = 0.513$. Type of LSCS:54% of the study group and 58% of the control group were operated as emergency cases, while 46% of the study group and 42% of the control group were elective caesarean. $Z=0.427$, $P=0.669$ 26% in the study group and 34% in the control group indication was fetal distress.

Total number of complication was significantly higher in the high risk (study) group 68% compare to low risk (control) group 22%. Abdominal incision: In the study group 66% cases and in the control group 48% were operated by vertical (median) or longitudinal abdominal incision. $Z = 2.428$, $P = 0.015$, Significant. Tubal ligation

with caesarean section : 38% in the study group and 24% in the control group underwent tubal ligation operation with caesarean section. $Z = 1.988$, $P = 0.047$, Significant.

62% of the cases in the study group and 14% cases in the control group had intraoperative complications which were in the form of adhesions, scar dehiscence, atonic PPH, obstructed labour, abnormal uterine pathology and morphology and intraoperative bleeding.

50% in the study group and 10% in the control group had postoperative maternal morbidity which were puerperal pyrexia, paralytic ileus, UTI, wound sepsis, DIC, CCF and HELLP syndrome. Birth weight of babies: 40% and 28% of the study and control group respectively had low birth weight baby. $Z=1.642$, $P=0.101$.

Mild depression and severe depression were clubbed for analysis. In the high risk group 2% had neonatal death, while this figure was 0% in the control group respectively. 28% babies in the study group and 18% babies in the control group had mild to severe depression and Apgar score below 6.42% and 12% babies in the high risk and low risk group respectively had perinatal morbidity which was in the form of prematurity, IUGR, respiratory distress syndrome and birth asphyxia. Duration of hospital stay: 4% and 2% cases in the study group had hospital stay between 10 to 15 days and more than 15 days respectively. While rest of the cases in the study group had hospital stay of less than 10 days. In the control group, all the cases had hospital stay less than 10 days. $\chi^2 = 4.296$, $df=1$ (Duration of stay 10-15 days and more then 15days were clubbed for analysis), $P=0.038$.

40% cases of the study group and 12% cases of the control group needed intensive management in the form of broad spectrum costly antibiotics, blood transfusion, expert medical opinion and prophylactic antibiotics. Neonatal outcome: 5.5% and no cases in both study and control group respectively had poor perinatal outcome. 72.2% good and 90% good prognosis in a study group and control group.

Type of anesthesia between: In the study group 94% cases received subarachnoid block (spinal) and rest 6% cases needed other type of anaesthesia like GA anaesthesia, while all the cases in the control group (100%) received subarachnoid block $\chi^2=4.296$, $P=0.038$.Duration of surgery: The average duration of surgery in 90% cases of the study .Group was less than 1 hour, while 10% in the study group required operation for more. than 1 hour. In the control group duration of surgery was less than 1 hour in all the cases. $\chi^2=8.526$, $P=0.004$. There was no maternal mortality reported in my study.

Table 1. Incidence of caesarean section during the study period

	No. of Cases	Percentage (Incidence)
Total number of admissions	6531	
Total number of deliveries	4908	
Total number of caesarean sections	1380	28.11



Table 2. Comparative Analysis of indication of Caesarean Section Between study group and control group

Indication	High Risk		Low Risk	
	No.	%	No.	%
CP or CPD	4	4	6	6
Non progress (dystocia)	4	4	10	10
failed induction	4	4	6	6
Prev. Caesarean	24	24	28	28
Pl. previa	8	8	-	-
Abroptio	4	4	-	-
IUGR	2	2	-	-
BOH	2	2	2	2
Infertility	2	2	4	4
Elderly Primi	2	2	-	-
Fetal distress	26	26	34	34
Breech	8	8	-	-
Transverse	2	2	-	-
Macrosomia	2	2	4	4
Obstructed labour	4	4	-	-
Genital Hesperes	-	-	2	2
HIV +ve	-	-	4	4
Oligohydromnios	2	2	-	-
Total	100	100	100	100

Table 3. Obstetric Complication

Obstet. Disorder	High Risk		Low Risk	
	No.	%	No.	%
Pre. Eclampsia	24	24	10	10
Eclampsia	6	6	0	0
PROM	16	16	4	4
RH(-)	8	5	0	0
Fibroid	2	2	0	0
Cholestasis of Preg.	0	0	6	6
G.D.M.	0	0	2	2
PPH	12	12	0	0
Total	68	68	22	22

Z=6.396, P<0.001.

Table 4A. According to cooplend score in low risk group cases. Maternal & Neonatal morbidity.

Cooplend Score	Low Risk No.	Maternal Morbidity No.	Neonatal Morbidity No.
0	12	0	0
1	10	2	2
2	78	8	10

Table 4B. According to cooplend score in high risk group cases. Maternal & Neonatal morbidity.

Cooplend Score	High Risk No.	Maternal Morbidity No.	Neonatal Morbidity No.
3	76	34	28
4	18	12	10
5	6	4	4

Table 5. Comparative analysis of intraoperative maternal complications between study group and control groups

Intraoperative Complications	High Risk		Low Risk	
	No.	%	No.	%
Previous poor quality scar at lower abdominal wall	4	4	4	4
Omental and flimsy adhesion	6	6	4	4
Scar dehiscence	4	4	4	4



Intraoperative Complications	High Risk		Low Risk	
	No.	%	No.	%
Impending to rupture	2	2	0	-
Atonic uterus	4	4	-	-
Obstructed labour	4	4	-	-
Chorioamnionitis	-	-	-	-
Abnormal uterine morphology and pathology	4	4	2	2
Retroplacental clots	4	4	-	-
Ruptured uterus				
Placenta previa	6	6	-	-
- Minor	2	2	-	-
- Major				
Abnormal placenta		-	-	-
Hematoma		-	-	-
Intraoperative bleeding				
- Moderate	10	10		-
- Severe	2	2		-
Extension of incision into				
- Broad ligament				
- Lower segment	4	4	-	-
- Upper segment			-	-
Injury to bladder and bowels	2	2	-	-
Obstetric hysterectomy	-	-	-	-
Classical LSCS	-	-	-	-
Others (High up bladder)	4	4	-	-
	62	62	14	14
Others				
- DIC	2	2		
- HELLP syndrome	2	2		
- CCF, hypoxia	-	-		
- Hypoxia & dyspnoea	2	2		

Z=6.847, P=<0.001, Highly Significant

Table 6. Comparative analysis of post operative morbidity between study group and control group

Postoperative complications	High Risk		Low Risk	
	No.	%	No.	%
Pyrexia (Puerperal pyrexia)	18	18	6	6
UTI	8	8	2	2
Chest infection	2	2	-	-
Paralytic ileus	4	4	-	-
Thrombophlebitis	-	-	-	-
Malaria	-	-	-	-
Wound sepsis	4	4	2	2
PPH	4	4		
Postpartum shock	-	-		
Postpartum psychosis	-	-		
Pulmonary edema	2	2		
ARF	-	-		
Septicemia	-	-		
Burst abdomen	-	-		
Chorioamnionitis	2	2		
Pulmonary embolism				

Z=6.018, P=<0.001, Highly Significant



Table 7. Comparative analysis of perinatal outcome between study group and control groups

Perinatal Outcome	High Risk		Low Risk		χ^2 value	P value
	No.	%	No.	%		
Total birth	100	100	100	100		
Live birth	98	98	100	100		
Still birth						
- FSB	-		-			
- MSB	-		-			
Neonatal death	2	2	-	-	0.505	0.477
Perinatal mortality	2	2				
Apgar score						
- 7-10 no depression	68	68	82	82	4.507 *	0.034
- 4-6 mild depression	28	28	18	18		
- < 4 severe	4	4				

Table 8. Comparative analysis of perinatal morbidity between study group and control groups

Perinatal Morbidity	High Risk(n=100)		Low Risk(n=100)	
	No.	%	No.	%
Respiratory distress syndrome	8	8	4	4
Birth asphyxia	4	4	2	2
Anemia (moderate)	2	2	-	0.5
Neonatal hyperbilirubinemia	8	8	-	-
Prematurity	12	12	4	4
IUGR	2	2	-	-
Septicemia	-	-	-	-
Meconium aspiration syndrome	4	4	2	2
Intracranial hemorrhage	-	-	-	-
Milk aspiration	-	-	-	-
Congenital anomalies	-	-	-	-
Neonatal Hypoglycemia	2	2		
	42	42	12	12

Z=4.619, P=<0.001, Highly Significant

Table 9. Comparative analysis of intensive management between study group and control groups

Specific Management	High Risk(n=100)		Low Risk(n=100)		χ^2 value	P value
	No.	%	No.	%		
Blood transfusion	16	16	6	6	2.034	0.042
Broad spectrum antibiotics	40	40	12	12	4.353	<0.001
Antihypertensive and sedatives	24	24	10	10	2.447	0.014
Anticonvulsants	6	6	-	-	4.291	0.038
Prophylactic antibiotics	-	-	-	-		
Dialysis	-	-	-	-		
Ryle tube, suction I/V fluid (extra) with NBM \geq 24 hrs	4	4	-	-	2.296	0.130
Catheterization \geq 15 days	2	2	-	-	0.505	0.477
Others						
-Diuretics		8		-	6.380	0.012
-Steroids		16		0.5	10.317	0.001
-Plasma expanders	8		-			
-Dopamine drip	16		2			

DISCUSSION AND CONCLUSION

Initially CS was resorted to in the interest of the mother. The indications were essentially ‘absolute’ like contracted pelvis or transverse lie. However, increasing

safety of the CS made birth by CS an alternative to vaginal delivery. Emergence of technology for foetal surveillance advances in neonatal care, limitation of family size, and



expectation of a healthy baby at the end of each pregnancy led to a further rise in CS. Also responsible for the rise are, fear of litigation, lack of skills for instrument delivery, an 'easy way out' for the attending obstetricians.

Caesarean section is now safer than it has ever been, in terms of advances in techniques and anesthesiology blood transfusion, surgery and the availability of "powerful" antibiotics. Yet, it can never be entirely safe and therefore, is not an alternative to vaginal delivery. The mortality and morbidity could be much higher in developing countries, where a number of health facilities lack proper equipment, trained personnel, blood bank and clean operation theatres. A concomitant decrease in perinatal mortality has not been substantiated by an increase in the rate of CS in developing countries, although in the western countries a steady drop in perinatal mortality has been shown [7]. Changing Trends: The changing trends in the CS rates for various indications may be explained by improved anesthetic techniques and neonatal survival. Socio-cultural changes and expectations of general population and obstetricians fear for litigation have made these changing rates and indications more acceptable [3]. Changing Trends in Operative Technique of Caesarean Section: The end-point of successful cesarean section is a healthy mother and healthy child. In the recent years, maternal risk from caesarean section has declined significantly and major factors responsible for the reduced risk include improvement in surgical and anaesthetic techniques, safe blood transfusion and the use of antibiotics. The notable changes that have occurred in recent years are the more widespread acceptance of spinal and epidural anesthesia for cesarean sections, the more widespread acceptance of the technique described by Misglav and Ladach, the practice of routinely exteriorization the uterus prior to suturing of the lower uterine incision, the use of synthetic slow absorbing suture materials, and the policy of approximating thick subcutaneous fat layers prior to approximating the skin edges.

Critical Assessment of indications for Caesarean Section in Modern Obstetrics: It has been clearly established that cesarean delivery is associated with greater risk with respect to both maternal morbidity and mortality when compared with vaginal delivery in the general population. Complications are most common with urgent or emergent C-section or after labor onset or membrane rupture; however, even scheduled caesarean delivery carries risks greater than with vaginal delivery. Romans et al [8], other factors that may increase the risk of postoperative complications include low socioeconomic status, genital infection, obesity or malnutrition and smoking, all of which may be more commonly seen in the setting of HIV infections. Thus, as the years go by, many women will be subjected to caesarean sections for ensuring fetal wellbeing. It is therefore, necessary to critically evaluate the practice of submitting such women to a repeat cesarean section during subsequent births [3].

In my study period, there were 6531 total obstetric admissions, 4908 total deliveries and 1330 total caesarean deliveries. The incidence of caesarean delivery was 28.11%. Comparative analysis of booked and unbooked cases in both groups shows that majority of the high risk were unbooked and cases got admitted during the emergency, while the low risk admissions were during routine checkup. This may be due to the fact that maximum number of patients in my study group belonged to rural background and low socioeconomic status. Also, it is worth mentioning that the prevailing health care services may not be efficient enough so as to cater the needs of rural population. This is comparable to the Tay SK Taskok FHM [9] (38%).

In my study maximum number of patients both from high risk and low risk groups belonged to the age group between 17-35 years. In the present study, maximum number of the patients of both the study groups and control group belonged to low socioeconomic status, representing the fact that the maximum of rural population is dependent on the aids provided by government hospital. Other studies also support the fact. Jayaram VK et al [10], Walvekar V, Anjaria P et al [11].

In my study, maximum number of patients from both study and control groups belong to rural background. This denotes the lowest stratum of the society is whole society dependent on the government hospital services for their health care. This is in affirmation of the other similar studies. Scott TD, Flora R, Deveny TC et al [12]. In this study maximum numbers of cases were multi para in a study and control group. In this present study, it is evident that the gestational age of maximum number of patients were between 36-40 wks was the time of CS, in both groups. This is in agreement with other studies. Hilder R. Costeloe K et al [13]. In this comparative study, majority of the cases, both the study and control groups, lie of the fetus were longitudinal. This fact is supported by other studies. Stevenson CS et al [14].

In my study, the most common presentation in the high risk as well as in the low risk groups was vertex. In this comparative study, it is evident from the pelvis of the patients both in the study and control group was adequate. This is comparable to the other related studies. Lewellyn Jones D [15]. In my study, it is clear that the maximum number of caesarean section done in both high risk and low risk groups were primary. This is similar with the other studies. Lira Plascencia et al [16], Amoa AB, Klufio CA et al [17].

In the present study, it is evident that the most common medical disorder found in the high risk and low risk cases was anaemia. This is also found in the other studies. This clearly shows poor nutritional status of the Indian women. Dutta DK et al [18]. In this comparative study, it is seen that the majority of the patients in both the groups were mildly anaemic. This is in agreement with other related studies. Dutta DK et al.

In my study, it is seen that the maximum number



of high risk cases and low risk cases were operated in the emergency hours. This shows the grim scenario of the medical care delivery system in India. This is not supported by other related studies. Stark M. Chavkin Y et al^[19]. In this study, Indication for caesarean section in the high risk cases were due to foetal distress (26%), while for previous section (24%), failure to progress (4%), while in the control group the maximum number of cases were operated due to FD (34%), Previous CS (28%). Since it is a referral hospital so many cases were came during emergency hour with fetal distress. This is supported by Krishna U et al [3].

In this comparative study, maximum number of abdominal incisions in the high risk cases was vertical while in the low risk cases maximum of abdominal incision were transverse. This is due to the fact that in the high risk cases there is much apprehension and there may be need for consultant level surgical expertise for which bigger area of exposure is needed and some cases with repeat caesarean section had vertical scar. This is in affirmation which other related studies. Hendrix SL, Schimp V et al [20], Ayers IWT, Morley GW [21].

In my study, it is seen that the tubectomy operations along with CS was done more in the high risk cases (38%) was compared to the low risk ones (24%). This shows the sense of responsibility towards the patients health of the treating doctors, which ethically forced them to indulge into this procedure, this preventing these patients from exposing them from the hazards of rupture uterus and repeated short gaped pregnancies. This is also supported by other studies. Annas GJ et al [22], Chervenek FA et al [23]. This comparative study regarding the maternal complications, this table evidently shows that the intraoperative maternal complications were greater in the high risk cases (62%) (Moderate to severe intraoperative bleeding 10%, as compared to the low risk groups (adhesions and scar dehiscence 4%, atonic PPH 0%). This is comparable to other studies. Vijaykar S, Rawal MY [24], Clark SL, Yeh SY, Phelan J et al [25], McCurdy Jr. CM, Mogom EM, Mc Curdy CJ et al [26].

Thus we see that surgical expertise is needed in dealing with the possible intraoperative complications, specially in the high risk cases. As senior experienced consultants are present in the operation theater and also the facilities made available prior to surgery to deal with the possible hazards.

This study shows that the postoperative complications were much more in the high risk cases (50%) (Postoperative pyrexia 18%, UTI 8% wound sepsis 4%) as compared to the low risk group (10%), (postoperative pyrexia 6%, UTI 2%). This is comparably similar to other studies. Naumann RW, Hauth JC et al [27]. In my study, it is evident from the table that the birth weight maximum number of babies was more than 2.5 kg in both the high risk and low risk groups. This is also worth mentioning that the incidence of LBW was more in the study group as compared to the low risk group. In the

present study, it is quite clear that number of live births were more in the low risk group, indicating the effect of high risk factors on the perinatal outcome. Supported by Nabila Zareen et al [28].

In this study, the incidence of perinatal morbidity was more in study group. This is also evident from this table that in the high risk group prematurity was the most common perinatal morbidity (12%) followed by Respiratory distress (8%) IUGR, birth asphyxia, each. While in the low risk group most common cause were IUGR (4%) and RDS (4%), followed by birth asphyxia (2%). In the present study, it is evident that duration of hospital stay was more in the study group as compared to the control group. This supported by the study of Poma PA et al [29]. There was no maternal mortality reported in my study due to better medical attention given to the high & low risk patient in the antenatal period, intra period and postnatal period. Supported by Vijaykar S, Rawal et al.

CONCLUSION

The caesarean section is one of the most important surgical intervention performed in modern obstetric practice. Its rate has increased dramatically over the past 3 decades. Evaluation of this factors and its impact on maternal and neonatal outcome stimulated us to undertake this study. High risk caesarean section requires more workup preoperatively and increased vigilance. It is seen that the high risk pregnancies when dealing with caesarean section given best maternal and perinatal outcomes. There is sharp decline in the risk expected morbidity and mortality in the mothers due to increased vigilance excellent monitoring facilities, ready availability of blood and blood products and suture materials, availability of experienced senior internist, coordinated critical care good, consultant level anaesthetic care, better anaesthetic agent (fentanyl) etc. with less side effects, proper and elaborate serial investigations, facilities and widespread availability of potent broad spectrum antibiotics. A change in anesthesia technique can optimize maternal outcome.

The neonatal morbidity and mortality rate are also sharply falling due to very elaborate antenatal fetal surveillance by CTG, USG, etc. Early intervention in high risk cases in the presence of consultant. Pediatricians and neonatologists, better resuscitation technique, improved care of newborn (specially for the VLBW, LBW patients and newborn etc.) and better facilities to shift the critically ill neonate to higher set of NICU.

Thus, with the advent of revolutionized operative facilities assisted by several expert clinicians the terror and apprehension, associated with caesarean section has greatly declined in modern obstetrics, there remains no apparent difference of opinion regarding resortment to caesarean section in high risk cases. The very fact that safe termination of pregnancy can be made possible by caesarean section, itself facilitates early recovery and significantly low mortality rates. In my study, I have



evaluated the various aspects of the same and have drawn conclusions regarding the expected and observed morbidity rates in high risk caesarean section. The mainstay of management remains meticulous monitoring of high risk cases in a well equipped tertiary care centre facilities and the possible anticipated difficulties to be encountered during the surgery.

Intraoperative and strict postoperative care so as to optimize the outcome. It requires a tertiary care with critical care infrastructure and neonatal setup. Neonatal outcome and maternal condition was not that morbid,

because of vigilance, observation, life saving drugs and multifaceted monitoring in our gadgets and continuous updating and data review. In our view the future modern obstetric practice will be an optimum neonatal and maternal outcome and would be comparable to the developed world. We suggest risk as per coopland scoring for every case admitted for a caesarean section. Which will definitely be helpful in predicting and evaluating the eventual outcomes and seeking help and cooperation from senior obstetrician and other department wherever the risk is perceived to be high.

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