

To Study the Maternal and Fetal Outcome of Cesarean Section Done At Term Gestation in Different Stages of Labour

Dr. Y. Radhika Ganesh¹, Dr. M. Jyothi²

¹. Associate Professor of Obstetrics & Gynaecology, Govt. Medical College, Mahbubnagar, Telangana State.

². Consultant Obstetrics & Gynaecology, Kagaznagar, Adilabad, Telangana State.

Corresponding Author: Dr. Y. Radhika Ganesh

Aim and Objectives: 1. To study the maternal and fetal morbidity and mortality associated with cesarean section done in first and second stages of labour.

Material and Methods: It is an observational cross sectional study conducted at Gandhi hospital during the period of 2015-2017 in the department of Obstetrics and Gynecology of about 200 parturient women undergoing primary cesarean section in first and second stages of labour. Booked and unbooked cases, parity, indications for cesarean section, intra operative complications and post operative complications for the mother are studied. Weight of the new born, APGAR scores, No. of NICU admissions, their indications and outcome are also studied.

Results: primary cesarean sections in second stage of labour were high among primies (75%). For the second stage cesarean sections, CPD (56.25%) was the common indication. Foetal distress was the common indication for first stage cesarean sections (38.04%). Among the Intraoperative complications, Bladder injury in the form of hematuria was found to be frequent complication in second stage cesarean section and is 4.5 times higher than first stage cesarean section. The incidence of uterine atony (6.25% vs 0.54%) and PPH (31.25% vs 2.7%) were high in second stage cesarean section. Post operative complications like the need for Blood transfusion (11.95% vs 2.5%) and wound infection (6.25% vs 5.43%) were more in second stage cesarean section. The number of NICU admissions were high 25% in first stage cesarean section compared to second stage which is 5.43%. Out of the total NICU admission, most of the babies (80%) recovered in first stage cesarean section where as it is less (25%) in second stage cesarean section.

Conclusion: Maternal and Neonatal morbidity and mortality was high in second stage cesarean section when compared to first stage cesarean section

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I. Introduction

Cesarean section is the most commonly performed abdominal surgery in women all over the world. Variable rates of cesarean section are reported between and within the countries. One fourth of the primary cesarean sections are reported to be performed in second stage of labour and are more complicated compared to the one performed in the first stage. The extraction of impacted head of the fetus from maternal pelvis constitutes the main difficulty of the cesarean section in the second stage of labour and is associated with increased risks such as hemorrhage, prolonged operation time and other intra operative complications. Neonatal morbidity and mortality due to hypoxia and fetal trauma remain to be one of the major issues regarding cesarean sections performed in second stage of labour. We present here the data of the maternal and neonatal morbidity in cesarean sections performed in first and second stages of labour.

200 women undergoing cesarean sections were included in the study. Inclusion criteria for study were all parturient mothers undergoing primary cesarean section with fetus in vertex presentation, with Gestational age at 37-40 weeks with no maternal co-morbidities or obstetrics complications. Informed consent is taken

II. Materials and Methods:

The study was conducted in Gandhi Hospital in the Department of Obstetrics And Gynaecology from June 2015 – Oct 2017, among the pregnant women who underwent Emergency section in first stage and second stage of Labour

This observational cross sectional study – was conducted in Gandhi Hospital, Secunderabad from June 2015-Oct 2017 in the department of Obstetrics and Gynecology. 200 antenatal women admitted through outpatient department and through Labour room who underwent primary cesarean section were included in the study.

INCLUSION CRITERIA:All Primis and Multi gravidas with previous normal vaginal deliveries with term gestation were included in the study.

EXCLUSION CRITERIA: Preterm deliveries, multiple gestation and placenta previa were excluded from the study.

Out of 200 women, 184 women underwent cesarean section in first stage of Labour and 16 women underwent cesarean section in second stage of Labour at the time of full cervical dilatation was noted. Maternal age, gestational age, augmentation of Labour by oxytocin, pre operative investigations, pre operative vitals were recorded. For every case antibiotic prophylaxis was given .

Intraoperative findings, Bladder complications, uterine injuries, intra operative blood loss were noted. The patients were followed till discharge. Development of fever, Uterine Involution, Lochial discharge ,day of suture removal and healing of the wound were evaluated before discharge.

Baby delivery time, APGAR, weight, indication for NICU admission, duration of stay in NICU and their outcome were studied. The results were compared. Statistical analysis was done by Fisher’s exact p test and chi – square.

III. Observation And Results

TABLE-1:ANTENATAL CARE

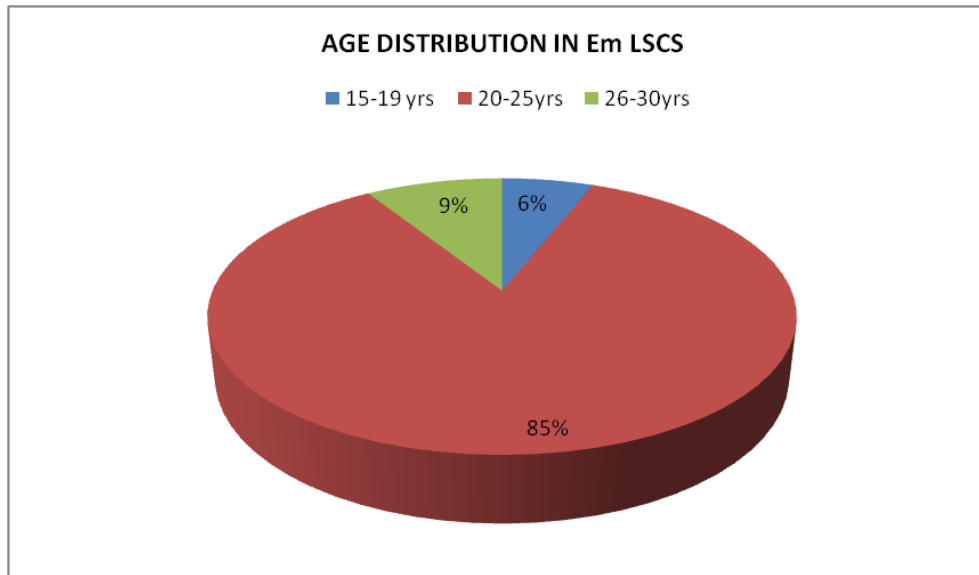
S.No	Antenatal care	First stage		Second stage	
		No. of cases	percentage	No.of cases	Percentage
1.	Booked cases	88	47.8%	2	12.5%
2.	Unbooked cases	96	52.17%	14	87.5%

87.5% cases of second stage were unbooked cases referred in view of Obstructed Labour.

AGE DISTRIBUTION IN MY STUDY

Among 200 cases more number of sections were done in 20-25 years age

CHART-1



PARITY OF STUDY POPULATION

TABLE-2:PARITY OF STUDY POPULATION

S.No	Parity	Total cases of first stage		Total cases of second stage		Total no. of cesarean sections	
		No. of cases	percentage	No. of cases	percentage	No. of cases	percentage
1.	Primi	145	78.8%	12	75%	157	78.5%
2.	Multi (2-5)	39	21.19%	4	25%	43	21.5%

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Among 184 cases of first stage cesarean section, 145(78.8%) were on Primigravida and 39(21.19%) were Multi gravida.

Among 16 cases of second stage cesarean section, 12(75%) were on Primigravida and 4(25%) were Multi gravida.

TABLE-3:INCIDENCE OF EMERGENCY CESAREAN SECTION IN DIFFERENT STAGES OF LABOUR

S. No.	Stages of Labour	Total no. of cases undergoing cesarean section	percentage
1.	1 st stage	184	92%
2.	2 nd stage	16	8%
3.	Total	200	100%

Among 200 cases cesarean section done in first stage 184(92%) patients and 16(8%) were done in second stage.

INDICATIONS FOR EMERGENCY SECTION

Most common indication for cesarean section in first stage was fetal distress in 70(38.04%) cases.

Most common indication for cesarean section in second stage was CPD in 9(56.25%) cases

CHART-2

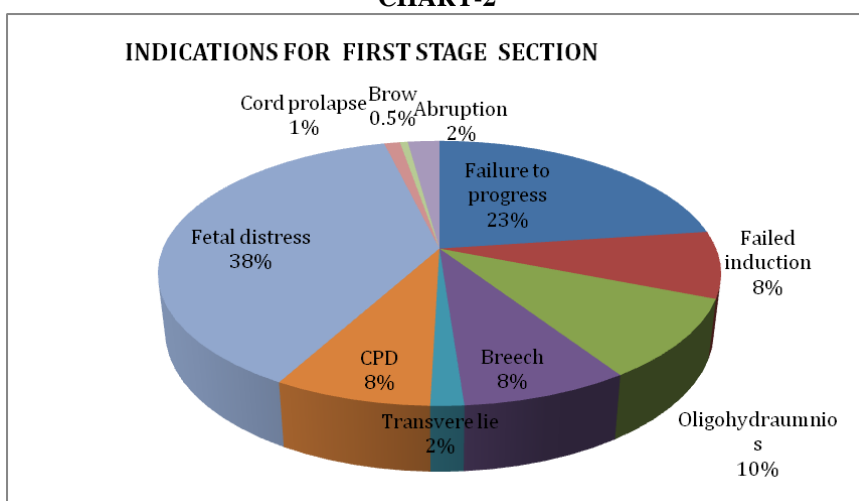


CHART-3

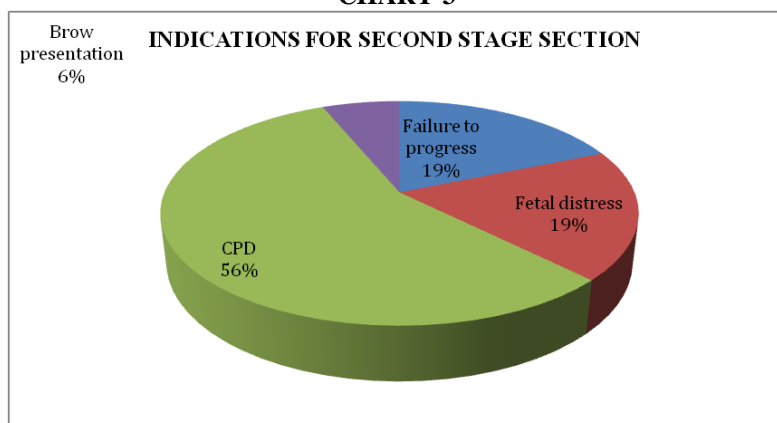


TABLE-4:INTRA OPERATIVE COMPLICATIONS IN EMERGENCY CESAREAN SECTION

S.No	Type of complication	Cases of 1 st stage		Cases of 2 nd stage	
		Number	percentage	Number	Percentage
1.	Bladder drawn up, oedematous	8	4.37%	11	68.75%
2.	Ballooned out lower uterine segment	3	1.63%	5	31.25%
3.	Uterine atony	5	2.71%	5	31.25%
4.	Uterine/Vesical laceration	Nil	Nil	Nil	Nil
5.	Injury to abdominal viscera	Nil	Nil	Nil	Nil

Percentage of intra operative complications were more in cesarean sections done in second stage compared to cesarean section done in first stage.

TABLE-5:POST OPERATIVE COMPLICATIONS OF CESAREAN SECTION

S.No	Type of Complications	Cases in first Stage		Cases in second stage	
		No. of cases	Percentage	No.of cases	Percentage
1	Post partum Hemorrhage	1	0.54%	1	6.25%
2	Wound Infection	10	5.43%	1	6.25%
3	Post operative blood Transfusions	22	11.9%	4	25%
4	Paralytic ileus	Nil	Nil	Nil	Nil
5	Pulmonary complications	Nil	Nil	Nil	Nil

Percentage of post operative complications were more in sections done in second stage compared to first stage.

CHART-4

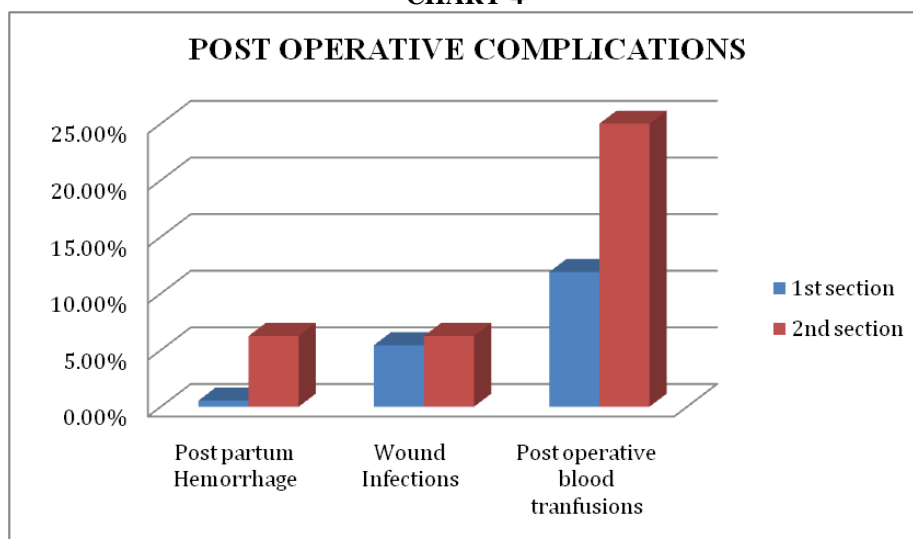


TABLE-6:NEONATAL OUTCOME

APGAR(1 minute)

S.No.	1st minute Apgar	1 st stage		2 nd stage	
		No.of cases	percentage	No.of cases	Percentage
1.	<3	3	1.64%	1	6.66%
2.	3-5	6	3.26%	4	26.66%
3.	5-7	174	94.5%	9	60%
4.	>7	1	0.5%	1	6.66%

Neonates delivered in firststage by cesarean section had good APGAR in94.5% of cases compared to 60% of neonates delivered in second stage cesarean section..

TABLE-7:NEONATAL OUTCOME

APGAR(5 MINUTE)

S.No	5 minute Apgar	1 st stage		2 nd stage	
		No.of cases	percentage	No.of cases	Percentage
1.	<3	1	0.5%	0	0%
2.	3-5	3	1.6%	2	13.33%
3.	5-7	4	2.17%	1	6.66%
4.	7-9	172	93.4%	11	73.33%
5.	>9	4	2.17%	1	6.66%

Neonates delivered in first stage cesarean section had good APGAR in 93.4% compared to 73.3% of neonates delivered in second stage cesarean section.

TABLE-8:WEIGHT DISTRIBUTION OF NEONATES IN MY STUDY

S.No.	Wt.of baby (in kgs)	1 st stage		2 nd stage		Total	
		No. of babies	percentage	No.of babies	percentage	No.of babies	percentage
1.	<2	5	2.71%	1	6.25%	6	3%
2.	2-3	124	66.66%	9	56.25%	133	66.5%
3.	>3	55	29.8%	6	37.5%	61	30.5%

Neonates delivered in second stage by cesarean section had more than 3kg weight in 37.5% compared to 29.8% delivered in first stage by cesarean section.

TABLE-9: NICU ADMISSIONS-INDICATIONS IN EMERGENCY CESAREAN SECTION

S.No	Indications	cases admitted in 1 st stage		cases admitted in 2nd stage	
		Number	Percentage	Number	Percentage
1	Birth asphyxia	4	40%	3	75%
3	Low birth Wt	5	50%	1	25%
4	Neonatal seizures	1	10%	Nil	Nil
5	Sepsis	Nil	Nil	Nil	Nil
6	MAS	Nil	Nil	Nil	Nil

75% of neonates delivered in second stage by cesarean section had Birth asphyxia compared to 40% of neonates delivered in first stage by cesarean section

CHART-5: NICU ADMISSIONS-INDICATIONS

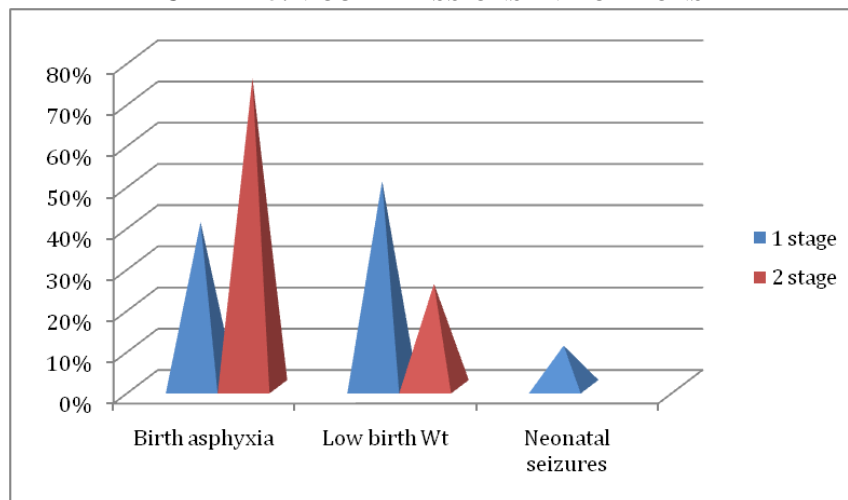
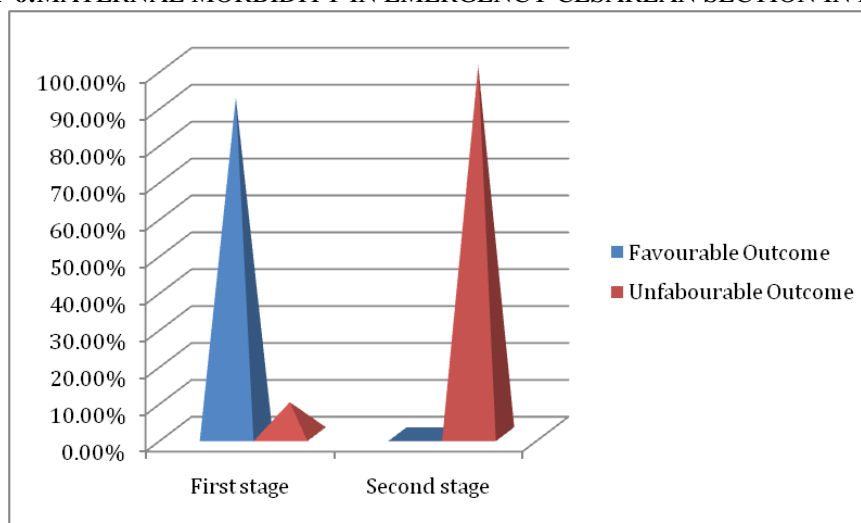


TABLE -10: MATERNAL MORBIDITY IN EMERGENCY CESAREAN SECTION IN LABOUR

S.No	Out come	Unfavourable		Favourable	
		Number	Percentage	Number	Percentage
1	First stage	16	8.7%	168	91.3%
2	Second stage	16	100%	0	0%

Maternal morbidity is statistically highly significant in cesarean sections done in second stage than in first stage. Chi-square value is 84.63. P value 0.001 – highly significant.

CHART-6: MATERNAL MORBIDITY IN EMERGENCY CESAREAN SECTION IN LABOUR



THERE IS NO MATERNAL MORTALITY IN our STUDY

TABLE-11:PERINATAL MORBIDITY IN EMLSCESAREAN SECTION IN LABOUR

S.No	Outcome	Unfavourable		Favourable	
		Number	Percentage	Number	Percentage
1	First stage	10	5.43%	174	94.5%
2	Second stage	4	25%	12	75%

Neonates delivered in second stage by cesarean section had statistically significant morbidity than neonates delivered in first stage by cesarean section.

Chi-square value 5.91

P-value < 0.05 – significant

CHART-7:PERINATAL MORBIDITY IN EMLSCESAREAN SECTION IN LABOUR

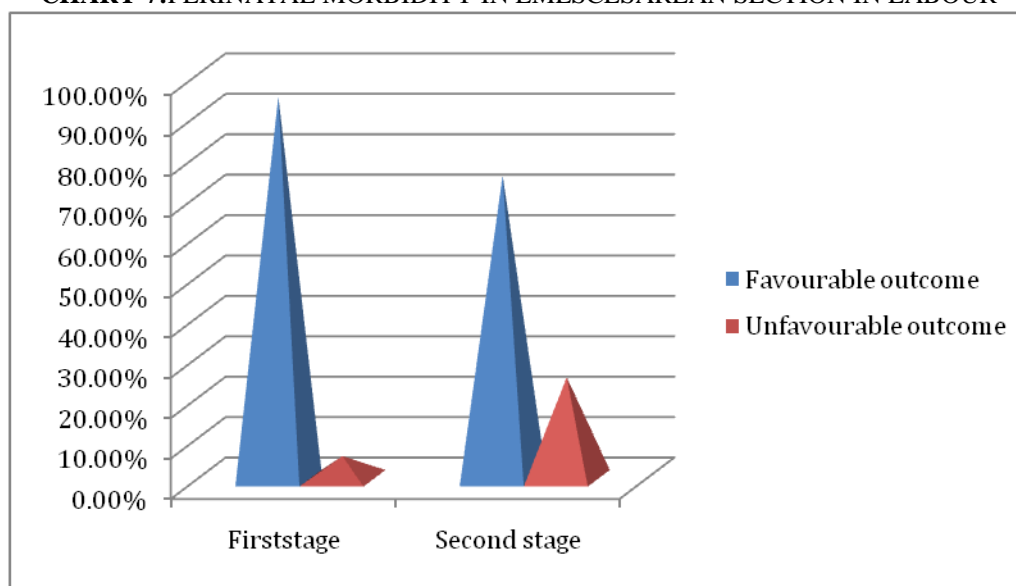


TABLE-12:NEONATAL MORTALITY AMONG NICU ADMISSIONS

S.No	Cesarean section		Recovered		Death	
			No	Percentage	No	Percentage
1	1 st stage	10	8	80%	2	20%
2	2 nd stage	4	2	50%	2	50%

Percentage (50%) of mortality was more in Cesarean section done in second stage compared to first stage (20%).out oftotalnicuadmissions .

IV. Discussion

The primary cesarean section performed over a period of Two years between Oct 2015-Nov 2017were studied. Incidence of cesarean section done in second stage of Labour was 8% compared to 12.3% y conducted by Ayhansucak etal⁵ and 8.6% in MoodlyJ¹.

Incidence of cesarean sections in second stage of labour was higher,81.25% among unbooked cases and 75% in Primigravida. These results were comparable to study done by Ritu Gupta et al where the incidence was 66%.

CPD was responsible for 56.25% of cases in which cesarean section was done in second stage .These values were comparable to 63%in the study done by Ritu Gupta et al, 67.6% in study conducted by Shimelis Fantu³ et alwhere in,63.3% in study done by Kabakyenga Jk⁴ et al.It was 66.3% in clinical study carried, out by DoshiHareshTripathiJagruti, MaheshwariSonal, et al .

Fetal distress was an indication in 38.04% cases inwhichcesarian section was done in first stage of labour and is comparable to 36% in study conducted by Moodly J et al¹.In second stage of labour fetal distress was responsible for 18.7% of cases of cesarean section is comparable to study conducted by Moodly J et al¹ in which the rate was 23%.

Most common Intra operative complication was urinary system injury noted in 68.75% in Cesarean section done in second stage of labour .All the urinary system injuries were confined to bladder without any

ureteral injuries in both groups. The most common bladder injury was the one due to traction resulting in hematuria. Significantly more patients had blood-stained urine in the second-stage than in the first-stage Cesarean section and the risk was 4.5 times higher in second-stage women vs first-stage women.

Uterine atony is 31.25% vs 2.71% in cesarean section done in second and in first stage of labour. Patients had PPH (6.25%) in cesarean section done in second stage of labour. Wound infection was noted in 6.25% patients compared to 5.43% in patients who underwent cesarean section in first stage of labour. But in studies conducted by Ritu Gupta et al² sepsis was 27%. Because of good pre operative Antibiotic coverage there was low incidence of sepsis in our institution. Post operative fever was noted in 10 vs 1 in second stage and first stage cesarean section respectively comparable to 4 vs 10 in study conducted by Moodly J et al¹.

Neonates delivered in second stage by cesarean section had more than 3kg weight in 37.5% compared to 29.8% delivered in first stage by cesarean section. 75% of neonates delivered in second stage by cesarean section who were admitted in Nicu had Birth asphyxia compared to 40% of neonates delivered in first stage by cesarean section. 31.25% of neonates had low 1st minute Apgar compared to 55.7% of newborns were admitted in the NICU after cesarean section because all had low first minute Apgar score in study conducted by Ritu Gupta et al². Infants born to women who had caesarean section in the second stage of labour, had higher incidence of birth asphyxia, admission to neonatal intensive care unit, sepsis, seizure, need for ventilation and neonatal death.

Neonates delivered in second stage by cesarean section had statistically significant morbidity than neonates delivered in first stage by cesarean section. The present study demonstrates that the cesarean sections performed in the second stage of the labour have significantly higher maternal and neonatal morbidity. The maternal morbidities can be attributed to the difficulty in handling the fetus impacted to the maternal pelvis. The unfavourable neonatal outcomes are probably due to the prolongation of the labour which leads to an inevitable result, hypoxia. Previous studies had also shown adverse outcomes of the neonates when the second stage of the labour is longer than the normal labour.

V. Summary

First Stage emergency cesarean section (92%) is more common than second stage cesarean section. It is 8% in unbooked cases (81.25%) and also in primas (75%). Fetal distress (38.04%) in first stage and undiagnosed CPD (56.25%) in second stage were common indications for cesarean sections. Uterine Atony was found in 31.25% as compared to 2.1% in second and first stages of labour. The same is reflected in the incidence of PPH (6.25% vs 0.54%).

VI. Conclusion

Second stage cesarean section was associated with more complications both to the mother and the neonate. Hence meticulous monitoring during labour and decision at appropriate time can reduce the maternal and neonatal morbidity and mortality.

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