

A clinical study of comparison of maternal and fetal outcome between primigravida and multigravida women with placenta previa admitted at a tertiary care centre in Vellore, Tamil Nadu: A prospective cohort study

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Abstract

Introduction: Placenta Previa is the complete or partial covering of the internal os of the cervix with placenta. It is the major risk factor for postpartum haemorrhage and lead to morbidity and mortality of the mother and new born. Uncontrolled postpartum hemorrhage from placenta previa and PAS (placenta accreta spectrum may necessitate need for blood transfusion, hysterectomy, ICU admissions and even death.

Aim: To compare the maternal and fetal outcome between primigravida and multigravida women with placenta previa admitted in Government Vellore Medical College, Tamil Nadu.

Results: The incidence of placenta previa was highest among the following age groups 20-29yrs i.e.67.32%, most common risk factors are caesarean section 45.5%(1 LSCS-30%, 2LSCS-16%), 1 bleeding episode cases-78% followed by 15% of cases has 2 episodes of bleeding,79% of cases in our study participants had cephalic presentation followed by breech 16% followed by transverse lie 5%,Type 2A Placenta previa had 46%, Type 2B placenta previa had 18%,Type 3 Placenta previa 16%,Type 4-11% Lowest incidence.

Type 1 placenta previa 9%, 82% of cases underwent emergency LSCS, 50% of cases underwent prophylactic uterine artery ligation, 32% of cases had PPH managed medically and surgically, 9% of cases underwent elective LSCS, for all 9 cases prophylactic uterine artery ligation done, no postpartum hemorrhage.

Type 2A placenta previa - 46 cases (6 cases elective LSCS, 40 cases emergency LSCS) 15 cases had foley tamponade with uterine artery ligation, 12% cases had foley tamponade, 1 cases underwent subtotal hysterectomy).

Type 2B placenta previa -18 cases (2 cases elective lscs, 16 cases emergency lscs) 9 cases had foley tamponade with uterine artery ligation, 4 cases had uterine artery ligation, 2cases had uterine artery ligation with B lynch).

Type 4 placenta Previa, 11 cases (emergency lscs), 5 cases – Foley with uterine artery ligation, 3 cases total hysterectomy, 1 case subtotal hysterectomy1 bladder repair.

Out of 9 perinatal deaths, Asphyxia and prematurity were major contributions 4.3% and 2.6% respectively followed by RDS1.6%) Neonatal mortality was 8-9% with placenta previa. Perinatal death were higher in gestational age between 30-33 weeks.

Conclusion: Placenta previa accounts 0.5% of all deliveries still it remains major cause for perinatal morbidity and mortality. It is noted that patient admitted to hospital as emergency

admission had maximum chances of maternal morbidity and perinatal mortality. Early detection of placenta previa by USG, conservative management including blood transfusion (mild bleeding cases), early elective termination of pregnancy by assessing fetal lung maturity along with NICU care reduces perinatal mortality. Maternal, perinatal morbidity and mortality is preventable can be achieved by spacing pregnancies, routine USG in pregnancy, early referral of high risk pregnant cases in tertiary care institute.

Keywords: Placenta previa, postpartum hemorrhage, caesarean hysterectomy, blood transfusion, perinatal morbidity and mortality.

Introduction

The incidence of placenta previa was reported to be 0.5–1.0% from total number of pregnancies^[4]. Studies have reported 5% of obstetric hysterectomies were due to placenta previa. Indication for emergency peripartum hysterectomy in recent years changed from uterine atony to abnormal placentation has now become a more common indication of pregnant women with previous caesarean scar^[3]. Placenta previa remains a risk factor for various maternal complications. There were higher incidence of postpartum haemorrhage (PPH) and blood transfusion in women with placenta previa compared to general population. Women with placenta previa were more likely to deliver babies before 37 weeks with Apgar score of less than 7. Studies showed that there were higher admission to neonatal intensive care unit, stillbirth and death. Placenta previa has been postulated that uterine scarring may be responsible for this abnormal implantation. Adverse maternal ages, higher parity, caesarean delivery, previous curettage, history of placenta previa, and abnormal uterus have been associated with increased risk of placenta previa.

Aim of study

The primary objective of the study is to compare the maternal and fetal outcome between primigravida and multigravida women with placenta previa admitted in Government Vellore Medical College, Tamil Nadu

Maternal outcome

Normal vaginal delivery, LSCS, PPH, heart failure and cardiogenic shock, thromboembolic manifestations, cerebro-vascular accidents, arrhythmia, acute coronary syndromes, aortic complications.

Fetal outcome

Live births, IUGR / Low birth weight, still birth, spontaneous abortion, therapeutic abortion, congenital anomalies, fetal bleeding.

Review of literature

>Harvey (1971) studied 89 patients retrospectively diagnosed placenta previa plotted against fetal weight and graph using 1 to 2 standard deviation from normal. There was no evidence of fetal growth retardation in women diagnosed with placenta previa.

>McShane PM, Heyl PS and Epstein MF (1985) reviewed 147 cases with partial or complete placenta previa from 1975-1982 and concluded that history of prior caesarean section associated with significant rise in maternal morbidity, (like massive hemorrhage, placenta accreta and hysterectomy). With tocolytic usage, 2/3rd of patients delivered before 36 weeks and perinatal mortality was 81/1000.

>Ananth CV(1997) bleeding in pregnancy is increased with parity, smoking, history of PIH and sex of the off-spring in 123941 singleton women (1980-1993). Placenta previa increased with maternal age by 9 times when age was >40 years and there was no relation of sex of the offspring with incidence of placenta previa.

>Placenta previa appears as protective factor against PIH due to increase in premature deliveries, hence less chance for PIH at term.

Reddi Rani P. and Latha (1999) from JIPMER, Pondicherry. 100 patients of placenta previa in 4 year were reviewed. Previous caesarean section/ abortion was associated in 20% of cases (multiparous in the age group of 20-29 years), while 48% of the patients had major degree of placenta previa and 33% had preterm deliveries and caesarean section rate was 64%. Perinatal mortality was 240/1000. However there was no maternal death. Author concludes that placenta previa account for approximately 0.5% of all deliveries but still remains a major cause of perinatal morbidity and mortality. Improvement in ultrasound, blood transfusion facilities, early detection of placenta previa and conservative management will help to decrease the perinatal mortality.

>Buttler (2001) studied that in placenta previa the association between maternal serum alpha fetoprotein and adverse outcome, evaluated 107 pregnancies with placenta previa and found that 14/107 cases (13%) (95% CI: 7%,21%) had MSAFP at least twice the multiple of median, found that increased incidence in hospitalization for APH at gestational age <30 weeks (50% versus 15%), Delivery at gestational age <30 weeks (29% versus 5%) and preterm delivery at <34 weeks (14% versus 1%) when compared with control of women who had MSAFP <2 MOM.

>Gillian (2002) studied in placenta previa association between previous LSCS and placenta previa and demonstrated that the effect of parity and previous LSCS had higher chance of placenta previa in primi versus previous LSCS.

>A.S.Faiz (2003) prevalence rate of placenta previa was 4.0 per 1000 births, with the rate being higher among cohort studies (4.6 per 1000 births), USA-based studies (4.5 per 1000 births), hospital-based studies (4.4 per 1000 births) than among case-control studies (3.5 per 1000 births), foreign-based studies (3.7 per 1000 births) and population-based studies (3.7 per 1000 births) respectively. Advancing maternal age, multiparity, previous Cesarean delivery and abortion, smoking and cocaine use during pregnancy, and male fetuses are increased risk for placenta previa.

>Sharma A (2004) studied tocolysis and role of ritodrine in symptomatic placenta previa. 60 women of placenta previa with gestational age between 28 to 34 weeks were studied, 30 women were given ritodrine and 30 women were treated symptomatically. They observed that in the study group, pregnancies were prolonged when compared to the control group ($p < 0.05$). The drug had no adverse effect on mother and fetus.

>Jackson RA(2004)-aim of study was to analyze whether pregnancies following IVF had higher risk of perinatal mortality, preterm delivery and increased chances of placenta previa. Gestational age (OR1.6;95%,CI1.3,2). Placenta previa were also significantly more prevalent in IVF group. Hence, IVF patients are required to be treated as high risk patients and need utmost detailed care and management.

>Oyelue (2006) conducted a study on women with placenta previa and observed that when placenta is at a distance of >2cm from cervical os, women had more chances of having a safe vaginal delivery. They also concluded that regional anesthetic for LSCS is safe and rate of placenta accreta increased due to increase in rate of primary LSCS.

>Ananth (2006) concluded with increase in age and parity (3+) the decrease in spacing between pregnancies also taken as a confounding factor for placenta previa.

>Allen VM (2006) searched article in Cochrane Library and Medline from 1990 to 2005 related to ICSI, IVF, GIFT, ZIFT was excluded. Observed that the perinatal mortality was significantly higher in the study group, than in spontaneous conception. In the study group, perinatal mortality in assisted conception, twin pregnancies appear to be lowest than in spontaneously conceived twin pregnancies. Due to the above mentioned factors closed surveillance is mandatory.

>Gobman (2007) analyzed the pregnancy outcome in women with placenta previa in relation to the number of previous sections in 19 academic centers over 4 years, concluded that women with increasing number of previous sections associated with increased maternal morbidity but not with perinatal morbidity.

>In Egypt, El Sherbiny, (2008) reported that the risk of placenta accrete is about 15% after one cesarean section and 60% after previous four caesarean section.

>Shonali Mayekar (2008) concluded that factors associated with development of placenta previa were advanced maternal age, number of previous cesarean sections, number of previous abortions and multiparity; incidence of placenta previa was 1.8%, complications seen most commonly in the neonatal outcome was prematurity at birth (42.85%) > RDS (28.5%) > aspiration(14.2%). 48% of the babies required resuscitation, out of which 24% required NICU admission, neonatal mortality in this study 280/1000 live births.

>Vergani *et al.*, (2009) concluded that >2/3rd of women with a distance of > 10 mm from the placental edge to cervical os have vaginal delivery without a risk of hemorrhage.

>Milosevic *et al.*, (2009) concluded that >2/3rd of women exact etiology of placenta previa is unknown. The condition may be multifactorial i.e multiparity, multiple gestations, advanced maternal age, previous caesarean delivery, previous abortion, smoking. The risk of neonatal mortality is higher for placenta previa babies compared with pregnancies without placenta previa (RCOG - 2011) >Gorodeski IG evaluated association between maternal and fetal/neonatal outcome in women with placenta previa and the site of Placenta Previa i.e. lowlying, marginal, partial or total. The following 3 were associated with Placenta Previa localization . Advanced maternal age was associated with major types of Placenta Previa, neonatal mortality in cases of vaginal delivery were associated with minor types of Placenta Previa.

>Richard E. Besinger, use of tocolysis in symptomatic placenta previa associated with clinically significant delay of preterm delivery. Significant improvement in clinical parameters such as interval from admission to delivery was observed in the tocolysis group. There was no observed statistical difference between the two treatment groups with regard to incidence of recurrent bleeding, interval from admission to first recurrent bleeding, and need for transfusion.

Risk FACTORS

1. Advanced maternal age

Ananth *et al.* 1996 has shown that women older than 35 years have nearly 4 fold increased risk of developing placenta previa than women in younger age group. 1 in 100 for women >35 years of age, 1 in 1500 women for <19 years, 9 fold more risk for >40 years than 20 years [2].

2. Parity

Higher the parity higher the incidence of placenta previa. 1.2 times following one delivery, 1.5 following 2 deliveries, 0.2% in nulliparous, 5% grandmulti (2) 2.2% of incidence in multiparity compared to 0.3% in general population .

3. Smoking and cocaine abuse Probably due to defective decidualization leads to increased risk of placenta previa. [4]

Williams and colleagues 1991 have shown that 2 fold increase risk carbon monoxide hypoxemia causing compensatory placental hypertrophy and also related defective decidual vascularization.

4. Multiple pregnancy/Placental size

The incidence of placenta previa is 40% higher in twins compared with that of singleton. Ananth *et al* 2003 has shown 40% higher among twins in comparison to singleton pregnancies because the placenta due its bigger size has a greater chance of encroaching to the lower segment. This was confirmed in a study which showed incidence of placenta previa of 0.55% for twin as compared to 0.31% in singleton gestation. (27)

5. Previous placenta previa

Williams reported recurrence in four consecutive pregnancies Gorodeski recorded incidence of 3.2%, 6 times more compared to general population. The recurrence risk of placenta previa

is increased 8 times (21)

6. Previous cesarean delivery

The risk of placenta previa increases with number of caesarean sections performed on the patients (6,25)

After 1 caesarean risk is 0.65%, After 2 caesarean risk is 1.5%

After 3 caesarean risk is 2.2%, After 4 caesarean risk is 10%

7. Endometrial damage and associated with previous abortions

There are significant association between placenta previa and previous dilation and curettage.(1) A six fold increase in the risk of placenta previa following medical termination of pregnancy in the first trimester lead to endometrial damage, which is turn lead to endometrial scarring.

8. Preterm delivery

Spontaneous labour before 37 week is more commonly complicated by bleeding from a low lying placenta than labour in a term pregnancy. Women with placenta previa the uterine contractions that normally occur during gestation cause separation of the placenta from its implantation site in the cervix and lower uterine segment causing bleeding in choriodecidual interface, thrombin release, and activation of the final pathway of parturition(9,10)

9. Ethnic origin and socio-economic status

The effect of ethnic origin on the incidence of placenta previa was considered in a study and higher incidence was found in Asian women when compared with white women.

10. Assisted reproductive technique

The prevalence is 6 fold higher in IVF pregnancies, four fold higher in ICSI pregnancies compared with spontaneous conception after adjusting for confounding factors like age, parity, smoking, previous cesarean.

Total number of birth during study period	15721
Total number of placenta previa case	101
Incidence of placenta previa	6.6%
Perinatal mortality rate	4.3%
NICU babies	42
Neonatal death	0
Still birth	3
Maternal death due to placenta previa	2

1. Age and distribution of age in the study

Participants:

Mean age of study Participant - 25.7 years

Maximum Age - 30 years

Minimum Age - 21 years

Mean + or - 2 S.D = 25.7 + 4.6 years

Table 1

Age	Number of cases	Percentage
<19 yrs	10	9.9%
20-29 yrs	68	67.32%
30-35yrs	15	14.85%
>40yrs	8	7.9%
Total	101	100%

In the present study, the incidence of placenta previa was highest among the following age groups 20-29yrs i.e.67.32% followed by 30-35yrs i.e.14.85%, >35yrs i.e.7.9%, <19yrs i.e.9.9%

2. Parity status of study participants

In our present study, the incidence of placenta previa was equal in both Primigravidae and multigravidae (G2P1L1)

Table 2

	Frequency	Percent	Valid percent	Cumulative percent
PRIMI	31	31.0	31.0	31.0
G2P1L1	31	31.0	31.0	62.0
G2P1L0	12	12.0	12.0	74.0
G3P2L2	21	21.0	21.0	95.0
G2A1	5	5.0	5.0	100.0

3. Previous pregnancy/risk factors of study participants

Table 3

	Frequency	Percent	Valid percent	Cumulative percent
One LSCS	30	30.0	30.0	30.0
Two LSCS	16	16.0	16.0	46.0
NVD D+C	11	11.0	11.0	57.0
NVD Without D+C	13	13.0	13.0	70.0
NIL	30	30.0	30.0	100.0

Risk Factors:

Table 4

Risk factor	Number of cases	Percentage
Caesarean section	46	45.5%
Abortion	11	10.8%
Twin gestation	0	0
Rh isoimmunization	1	0.99%
None	43	42.8%
	101 cases	100%

In our study most common risk factors are caesarean section 45.5%(1 LSCS-30%, 2LSCS-16%) followed by 42.8% of cases had no risk factors,10.8% cases had previous history of abortions,1 case were RH iso immunization

4. Gestational age in weeks

Mean + or - 2 (S.D) = 35.5 + 2.8 years

The mean gestational age =35.5+/-2.8 yrs

5. Bleeding episodes of study subjects

Table 5

	Frequency	Percent	Valid percent	Cumulative percent
Nil	6	6.0	6.0	6.0
One episode	78	78.0	78.0	84.0

Two episode	15	15.0	15.0	99.0
More than 2 episodes	1	1.0	1.0	100.0

In our study, 1 bleeding episode cases-78% followed by 15% of cases has 2 episodes of bleeding

6. Fetal presentation pattern in the study subjects:

Table 6

	Frequency	Percent	Valid percent	Cumulative percent
Cephalic	79	79.0	79.0	79.0
Breech	16	16	16.0	95.0
Transverse lie	5	5.0	5.0	100.0

79% of cases in our study participants had cephalic presentation followed by breech 16% followed by transverse lie 5%

7. Type of placenta previa in the study subjects

Table 7

	Frequency	Percent	Valid percent	Cumulative percent
Type 1	9	9.0	9.0	9.0
Type 2a	46	46.0	46.0	55.0
Type 2b	18	18.0	18.0	73.0
Type 3	16	16.0	16.0	89.0
Type 4	11	11.0	11.0	100.0

Type 2A Placenta previa had 46%, Type 2B placenta previa had 18%, Type 3 Placenta previa 16%, Type 4-11% Lowest incidence Type 1 placenta previa 9%

8. Type of deliveries:

Table 8

	frequency	percent	valid percent	cumulative percent
LN with PPH	3	3.0	3.0	3.0
LN without PPH	4	4.0	4.0	7.0
elective LSCS	9	9.0	9.0	16.0
emergency LSCS	82	82.0	82.0	98.0

There has been profound increase in emergency caesarean section rate with improvement in maternal and neonatal outcome

Total number of cases delivered labour natural with low lying placenta -7 cases
Augmented with oxytocin – 4 cases -3.96%
Spontaneous progression – 3 cases-2.96%
Term Cases-5
Preterm Cases-2 delivered vaginally

82% of cases underwent emergency LSCS, 50% of cases underwent prophylactic uterine artery ligation, 32% of cases had PPH managed medically and surgically, 9% of cases underwent elective LSCS, for all 9 cases prophylactic uterine artery ligation done, no

postpartum hemorrhage

9. Types of Hemorrhages:

Table 9

	Frequency	Percent	Valid percent	Cumulative percent
Antepartum	3	3.0	23.0	3.0
Intrapartum	31	31.0	31.0	34.0
Postpartum	12	12.0	12.0	46.0
Ap = ip	39	39.0	39.0	85.0
Pp + ip	15	15.0	15.0	100.0

42 cases had hemorrhage in antenatal period in which 3 patients had profuse bleeding during antepartum period followed by 31 cases had intrapartum hemorrhage treated with blood and blood products

10. Types of Transfusion

Table 10

	Frequency	Percent	Valid percent	Cumulative percent
Antepartum	15	15.0	15.0	15.0
Intrapartum	14	14.0	14.0	14.0
Postpartum	22	22.0	22.0	51.0
Ap = ip	29	29.0	29.0	80.0
Pp + ip	20	20.0	20.0	100.0

Most of the blood transfusion started in antenatal period followed by postpartum period

11. Duration of Surgery

Mean + or - 2 S.D = 46.7 + 16.6 minutes

Table 11

Intra operative complications				
	Frequency	Percent	Valid percent	Cumulative percent
FT	27	27.0	27.0	27.0
UAL	21	21.0	21.0	48.0
B LYNCH	5	5.0	5.0	53.0
SH	3	3.0	3.0	56.0
TH	3	3.0	3.0	59.0
BR	2	2.0	2.0	61.0
FT+UAL	34	34.0	34.0	95.0
UAL+B LYCH	5	5.0	5.0	100.0
Total	100	100.0	100.0	

34% cases had foley tamponade with B/L uterine artery ligation, 27% had foley tamponade

Interventions taken for intra operative

Table 12: A. type of placenta previa - type 1

	Frequency	Percent	Valid percent	Cumulative percent
FT	8	88.9	88.9	88.9
UAL	1	11.1	11.1	100.0
TOTAL	9	100.0	100.0	

In Type 1 placenta previa -9 cases (underwent 2 emergency LSCS and 7 labour natural) 88.9% of cases had foley tamponade,15% had foley tamponade with uterine artery ligation

Table 13: Type of placenta previa - type 2

	Frequency	Percent	Valid percent	Cumulative percent
FT	12	26.1	26.1	26.1
UAL	11	23.9	23.9	50.0
B LYNCH	5	10.9	10.9	60.9
SH	1	2.2	2.2	63.0
FT+UAL	15	32.6	32.6	95.7
UAL+B LYNCH	2	4.3	4.3	100.0
TOTAL	46	100.0	100.0	

In Type 2A placenta previa - 46 cases (6 cases elective LSCS, 40 cases emergency LSCS) 15 cases had foley tamponade with uterine artery ligation, 12% cases had foley tamponade, 1 cases underwent subtotal hysterectomy)

Table 14: Type of placenta previa -type 2b

	Frequency	Percent	Valid percent	Cumulative percent
FT	3	16.7	16.7	16.7
UAL	4	22.2	22.2	38.9
FT+UAL	9	50.0	50.0	88.9
UAL+B LYNCH	2	11.1	11.1	100.0
TOTAL	18	100.0	100.0	

In Type 2B placenta previa -18 cases (2 cases elective lscs, 16 cases emergency lscs) 9 cases had foley tamponade with uterine artery ligation, 4 cases had uterine artery ligation, 2cases had uterine artery ligation with B lynch)

Table 15: Type of placenta previa - type 3

	Frequency	Percent	Valid percent	Cumulative percent
FT	4	25.0	25.0	25.0
UAL	4	25.0	25.0	50.0
SH	1	6.2	6.2	56.2
BR	1	6.2	6.2	62.5
FT+UAL	5	31.2	31.2	93.8
UAL+B LYNCH	1	6.2	6.2	100.0
Total	16	100.0	100.0	

In Type 3 placenta previa -16 cases (1 electivelscs, 15 emergency cases) 5 cases had foley with uterine artery ligation, 1 case subtotal hysterectomy, 1 case bladder repair

Table 16: Type of placenta previa - type 4

	Frequency	Percent	Valid percent	Cumulative percent
UAL	1	9.1	9.1	9.1
SH	1	9.1	9.1	18.2
TH	3	27.3	27.3	45.5
BR	1	9.1	9.1	54.5
FT+UAL	5	45.5	45.5	100.0
TOTAL	11	100.0	100.0	

In Type 4 placenta Previa, 11 cases (emergency lscs), 5 cases – Foley with uterine artery

ligation, 3 cases total hysterectomy, 1 case subtotal hysterectomy 1 bladder repair

12. Pattern of Post operative Complications:

Table 17

	Frequency	Percent	Valid percent	Cumulative percent
NIL	53	53.0	53.0	53.0
Fever	14	14.0	14.0	67.0
LRI	7	7.0	7.0	74.0
Wound infection	5	5.0	5.0	79.0
Ards	1	1.0	1.0	80.0
Hypotension	18	18.0	18.0	98.0
AKI	2	2.0	2.0	100.0

53% cases were nil postoperative complications, 18 cases were developed hypotension managed with IV fluids, 14 cases were developed fever, LRI treated with antipyretics, antibiotics, 2 cases were AKI managed by fluid restriction and serial renal parameters monitoring in frequencies 2% 1% .

13. Pattern of Blood components Transfused:

Table 18

	Frequency	Percent	Valid percent	Cumulative percent
Packed Cell	35	35.0	35.0	35.0
FFP	14	14.0	14.0	49.0
Packed Cell +FFP	37	37.0	37.0	86.0
PC + FFP + Cryo	14	14.0	14.0	100.0

35% of our patients received only packed cell transfusion, 37% received blood along with FFP transfusion

14. Neonatal Outcomes

Resuscitation -0.9%
Nicu admission -41.5%
No nicu admission- 53.4%
Recovered -87.1%
Still birth -3

Table 19

	Frequency	Percent	Valid percent	Cumulative percent
Nil	4	4.0	4.0	4.0
Pre term	14	14.0	14.0	18.0
Term	51	51.0	51.0	69.0
Still birth	3	3.0	3.0	72.0
Rds	1	1.0	1.0	73.0
Preterm + LBW	17	17.0	17.0	90.0
Preterm + LBW+ RDS	10	10.0	10.0	100.0

Out of 9 perinatal deaths, Asphyxia and prematurity were major contributions 4.3% and 2.6% respectively followed by RDS(1.6%) Neonatal mortality was 8-9% with placenta previa. Perinatal death were higher in gestational age between 30-33 weeks

15. Univariate analysis

Table 20

S. No	Study variables	Type of statistical test - applied	(p value)	Significance value
1.	Post operative complications Vs Type of delivery	Chi Square Test	.04	yes
2.	Type of placenta previa Vs Ioc	Chi Square Test	1.07	no
3.	Type of delivery Vs Baby outcome	Chi Square Test	.02	yes
4.	Transfusion Vs Blood components	Chi Square Test	3.74	no

In univariate analysis, there is a significant p value between postoperative complication vs type of delivery and type of delivery vs baby outcome.

Discussion

In the present study, the incidence of placenta previa is 6.6%. The incidence was highest in the age group of 20-29 years i.e., 67.3%, followed by women in 30-35 year age group, above 35 year age group and less than 19 year age group, i.e. 14.85%, 7.9%, 9.9% respectively. The mean maternal age in our study was 25.7±4.6 years which is similar to observation made by Singhal *et al* (2008) as 26.2 years. In the present study, the incidence of placenta previa was equal in primi and multi gravidas 31%. The incidence in Grand multi (>4 viable births) was nil. Recurrence rate following placenta previa is 4-8% but in the present study there was no history of previous placenta previa. Rani. P.R. *et al* (1999), shows that prior caesarean section is 45.5% and 10.8% had abortion, majority of patient had no risk factors. Totally 45.5% patients were previous LSCS, no patients had previous myomectomies and 11% patients had previous dilatation and curettage. Out of 101 cases of placenta previa 7 cases had minor degree (Type I, Type IIA) and 94 cases had major degree of placenta previa (Type II B, Type III & Type IV). Among this Type 2a placenta previa is most commonly seen (46%) followed by type 2b (18%), type 3 (16%). Mean gestational age in our study 35.5±2.8. 79% of cases in our study participants had cephalic presentation followed by breech 16%. In the present study, all patients received blood transfusions (35% received PC alone, 37% received PC +FFP, 14% of patient received PC+FFP+CRYO) and more blood transfusion required in intrapartum and postpartum period. 53% of patients had nil complications, 18% went in for hypotension and / or shock, 14% developed fever, least complication in our study was AKI and ARDS. Hysterectomy was done in 6 cases. In this study 3 cases of peripartum hysterectomy was for anterior placenta previa. Indication for emergency peripartum hysterectomy in recent years has changed from uterine atony to abnormal placentation. In the present study, 2 cases, caesarean hysterectomy was done for uterine atony, after all conservative measure to arrest bleeding failed. Histopathology specimen reports for hysterectomy specimens were showing edematous myometrial tissues. For 1 patient hysterectomy was done later for secondary PPH. 2 patients underwent bladder repair. Perinatal morbidity in placenta previa: In the present study, 0.9%, 41.5% of babies required resuscitation and NICU admission, 53.4% of babies had no NICU admission, 3 babies still born and no neonatal death occur, 9 babies had perinatal death in our study. In the present study perinatal deaths were higher in the gestational age group of 30-33 weeks and the perinatal mortality was 89.1%. The perinatal mortality between 34-36 weeks group was 0%. This shows that the PNM rates are low for term fetus. The important causes for perinatal mortality are asphyxia, prematurity, congenital malformation and respiratory distress.

Summary and Conclusion

Placenta previa accounts 0.5% of all deliveries still it remains major cause for perinatal morbidity and mortality. It is noted that patient admitted to hospital as emergency admission had maximum chances of maternal morbidity and perinatal mortality. Early detection of placenta previa by USG, conservative management including blood transfusion (mild bleeding cases), early elective termination of pregnancy by assessing fetal lung maturity along with NICU care reduces perinatal mortality. Maternal, perinatal morbidity and mortality is preventable can be achieved by spacing pregnancies, routine USG in pregnancy, early referral of high risk pregnant cases in tertiary care institute. In present study, 101 placenta previa cases taken and studied type of placenta previa, clinical course, maternal and fetal outcome.

1. In the present study, the following age groups had highest and lowest incidence 20-29yrs i.e.67.32% >30-35yrs i.e.14.85%, >35yrs i.e.7.9%, <19yrs i.e.9.9%
2. Most common risk factors in our study - caesarean section 45.5% (1LSCS-30%, 2LSCS-16%) >42.8% of cases had no risk factors >10.8% cases had previous history of abortions >1 case RH isoimmunization
3. In placenta previa, primi gravida and multigravida (G2P1L1 With previous lscs) had same incidence -31%
4. 79% of cases in our study participants had cephalic presentation >breech 16% >transverse lie 5%
5. Type 2A Placenta previa had 46% >Type 2B placenta previa had 18% >Type 3 placenta previa 16% >Type 4 -11%, lowest incidence Type 1 placenta previa 9%
6. 82% of cases underwent emergency LSCS, 50% of cases underwent prophylactic uterine artery ligation, 32% of cases had PPH managed medically and surgically 9% of cases underwent elective LSCS, for all 9 cases prophylactic uterine artery ligation done, no PPH
7. 42 cases had hemorrhage in antenatal period in which 3 patients had profuse bleeding during antepartum period followed by 31 cases had intrapartum hemorrhage treated with blood and blood products
8. Over all most common intra operative procedure done: 34% cases had foley tamponade with B/L uterine artery ligation, 27% had foley tamponade
9. In present study, Type 1 placenta previa -9 cases (2 cases underwent emergency LSCS and 7 labour natural) 88.9% of cases had foley tamponade, 15% had foley tamponade with uterine artery ligation
10. In Type 2A placenta previa - 46 cases (6 cases elective LSCS, 40 cases emergency LSCS) 15 cases had foley tamponade with uterine artery ligation, 12% cases had foley tamponade, 1 cases underwent subtotal hysterectomy)
11. In Type 2B placenta previa -18 cases (2 cases elective lscs, 16 cases emergency lscs) 9 cases had foley tamponade with uterine artery ligation, 4 cases had uterine artery ligation, 2 cases had uterine artery ligation with b lynch)
12. In Type 3 placenta previa-16 cases (1 elective lscs, 15 emergency cases) 5 cases had foley with uterine artery ligation, 1 case subtotal hysterectomy, 1 case bladder repair
13. In type 4 placenta previa-11 cases (emergency lscs) 5 cases -foley with uterine artery ligation, 3 cases total hysterectomy, 1 case subtotal hysterectomy, 1 bladder repair, 2 maternal deaths
14. 53% cases were nil postoperative complications, 18 cases were developed hypotension managed with IV fluids, 14 cases were developed fever, LRI treated with antipyretics, antibiotics, 2 cases were AKI managed by fluid restriction and serial renal parameters monitoring
15. 35% of our patients received only packed cell transfusion, 37% received blood along with FFP transfusion
16. Out of 9 perinatal deaths, Asphyxia and prematurity were major contributions 4.3% and 2.6% respectively followed by RDS 1.6%. Neonatal mortality was 8-9% with placenta previa. Perinatal death were higher in gestational age between 30-33 weeks

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