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A PROSPECTIVE OBSERVATIONAL STUDY TO FIND OUT VARIOUS FACTORS AFFECTING MATERNAL AND PERINATAL OUTCOME IN PREGNANCY ASSOCIATED WITH PLACENTA PREVIA

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ABSTRACT Placenta Previa is a grave obstetrical emergency and is a leading cause of maternal and perinatal mortality and morbidity worldwide[1]. It is defined as implantation of placenta in lower uterine segment, overlying or approaching internal cervical os[2]. This clinical prospective study was conducted in the Department of Obstetrics And Gynaecology, Kamla Raja Hospital Gwalior. The study comprised of 100 patients of placenta previa admitted in Department of Obstetrics and Gynaecology. The duration of study was one and half years. Antenatal women with gestational age of more than 34 weeks presenting with a complaint of painless vaginal bleeding or those who are diagnosed as having placenta previa on routine ultrasound examination was included to study the risk factors., the mode of deliveries and the maternal and fetal outcomes for placenta previa. It is observed from our study that the majority of our patients were from rural areas with poor educational standard, low socioeconomic status, unaware of the importance of antenatal visits and increasing use of primary cesarean section results in increasing incidence of placenta previa as well as accreta. Therefore the changing trend of rising number of caesarean section stress over the need of placenta previa to be managed at tertiary care centre where team of expert obstetrician, anaesthetist, neonatal and blood facilities are available.

KEYWORDS :

INTRODUCTION

Placenta Previa is a grave obstetrical emergency and is a leading cause of maternal and perinatal mortality and morbidity worldwide[1]. It is defined as implantation of placenta in lower uterine segment, overlying or approaching internal cervical os[2]. It is a major risk factor for obstetric haemorrhage especially in women with a previous uterine scar[3] and it accounts for one third of all cases of APH[4,5].

Antepartum, intrapartum and postpartum hemorrhage, need for blood transfusion and risk of requiring hysterectomy are the major maternal complications of placenta previa[6,7] whereas preterm birth, low birth weight, low APGAR score as well as increased rate of neonatal intensive care unit (NICU) admission are notable neonatal complications[8,9]. Early prenatal diagnosis allows for timely management thereby reducing the perinatal and maternal morbidity and mortality by keeping an eye on need of blood transfusion, and arranging for a team of experienced surgeon, anaesthesiologist and paediatrician[10]. As there is an increase in primary cesarean rate, and increased incidence of placenta previa the purpose of this study is to assess the value of demographic profile and high risk factors like parity, advancing age, previous cesarean sections and methodology of management to find its relationship with maternal and perinatal outcome[11].

AIMS AND OBJECTIVES

1. To study the risk factors for placenta previa.
2. To study the mode of deliveries and method of management.
3. To study the maternal and fetal outcome.

MATERIAL AND METHODS

This clinical prospective study was conducted on 100 patients of placenta previa in the Department of Obstetrics And Gynaecology, Kamla Raja Hospital Gwalior for the period of one and half years.

Patients who presented to our emergency ward or outpatient department with placenta previa confirmed by ultrasonography and with gestational age beyond 34 weeks were selected irrespective of their parity, type of placenta previa and with a live or dead foetus included in the study. Cases < 34 weeks of gestational age, other than placenta previa, like abruption placenta etc. and not given consent were excluded from the study.

Method of collection of data: Antenatal women with gestational age of more than 34 weeks presenting with a complaint of painless vaginal bleeding or those who are diagnosed as having placenta previa on routine ultrasound examination will be included in this study. Detail maternal history and demographic profile will be obtained for all included patients.

RESULTS

Table 1 : Correlation of parity and placenta previa

Parity	No. of cases	Percentage
Primi	22	22%
Multi (2-3)	55	55%
Grand multi (>=4)	23	23%
Total	100	100%

This table shows the correlation of parity with placenta previa. Majority of the patients 55% are multigravida of 2-3 parity followed by grand multipara and primi patients.

Table 2 : Risk factors for placenta previa

Risk factors	No. of patients	Percentage
Prev caeserean sections	25	42%
Abortions	16	27%
Twin pregnancy	4	7%
Rh negative	4	7%
Myomectomy	2	3%
Maternal age >35years	8	14%

Amongst all the risk factors, Prior history of cesarean sections and abortion was found to be maximum in cases with placental abnormality followed by age group> 35 years.

Damage to the endometrium has shown to be a risk factor for abnormal implantation of placenta.

Table 3 : Antenatal complications

Antenatal complications	No. of patients	Percentage
Antepartum bleeding	36	36%
S.Anemia<7 gm	32	32%
Malpresentation	8	8%
PIH	10	10%
IUD	14	14%

36 cases (36%) experienced antepartum bleeding. Women with antepartum bleeding were more likely to be delivered for hemorrhage.

Severe anemia (Hb% <7gm %) was found in 32% of cases with placental abnormality, followed by malpresentation, PIH and IUD in decreasing order.

Table 4 : Intraoperative complications and management

Intraoperative complications and management	Frequency
Scar dehiscence	7
Uterine artery ligation	6
Internal iliac artery ligation	1
Intrauterine packing	26
Balloon tamponade	14
B-lynch	2
Cesaerean hysterectomy	6
Bladder injury and repair	8
None	29

Various intra operative complications encountered in the study cases and majority of cases were managed by intra uterine tamponade or packing.

6% cases underwent obstetric hysterectomy in cases with placental abnormality. 8% cases had bladder injury and in 2 % cases B- lynch suturing was done.

Table 5 : Post-Operative Complications and Maternal Outcome

	No. of Patients
Shock (PPH)	13
Febrile illness	14
Abdominal distension	16
Wound Infection	05
DIC	06
Respiratory complication (ARDS, Pneumonia, Pulmonary Oedema)	18
Ventilatory Support	10
Mortality	06

13 and 10 cases were complicated by PPH respectively followed by respiratory complications in 18 cases.

10 cases required ventilatory support and maternal mortality was as high as 6%. DIC complicated 6 cases.

Table 6 : Perinatal morbidity and mortality in the present study

Mean Baby Weight	Placental abnormality (n=100)	
	No. of Patients	Percentage
<2kg	22	22
2-2.5kg	41	41
>2.5kg	37	37
Resuscitation	26	26
NICU admissions	36	36
IUD	13	13
Mortality	17	17

In our study the mean baby weight was around 2-2.5kg found in 41% cases. 36% babies were admitted in NICU out of which 17% babies were certified.13% were IUD.

Table 7 : Correlation of birthweight and perinatal outcomes

Birth weight	Neonatal mortality	IUD	stable	Total	Fisher's test	p-value
1-1.4	3	1	0	4	52.828	<0.001
1.5-1.9	11	4	3	18		
2.0-2.4	3	7	31	41		
>2.5	0	1	36	37		
Total	17	13	70	100		

In the present study perinatal mortality is higher in the birth weight of 1-1.4 kg and lowest in >2.5 kg.

Table 8 : Distribution of patients with placental abnormality as per gestational age with previous obstetric history

Gestational age	Prev. LSCS		Prev. NVD	
	No. of pt.	percentage	No. of patients	Percentage
34-35 weeks	14	53.8%	27	60%
36-37 weeks	09	34.6%	13	28.8%
38-39 weeks	02	7.69%	05	11.11%
40 weeks	02	7.69%	00	0%

In our study, we found that maximum cases of placental abnormality with history of caesarean section ranged between 34 to 35 weeks gestational age, followed by 36-37 weeks.

Similarly, in cases of placental abnormality with history of normal vaginal deliveries, maximum cases were found in gestational age group of 34-35 weeks.

Cases with abnormal placentation presented before term in our study.

Table 9 : Correlation of period of gestation and maternal outcomes

Period of gestation	Certified	Stable	Total	Fisher's test	p-value
34-35 weeks	3	46	49	4.381	0.243
36-37weeks	1	38	39		
38-39weeks	2	8	10		
>40 weeks	0	2	2		
Total	6	94	100		

This study shows that out of 49 patients of 34-35 weeks gestation 3 patients were certified and out of 39 patients 1 was certified. 10 patients in 38-39 weeks gestation 2 patients were certified. The maternal mortality rate in our study due to placenta previa was found to be 0.32 per 1,00,000 live births.

Table 10 : Correlation between period of gestation and perinatal outcomes

Period of gestation	Neonatal mortality	IUD	Stable	Total	Fisher's test	p-value
34-35	10	10	29	49	6.915	0.272
36-37	5	2	32	39		
38-39	2	1	7	10		
>40	0	0	2	2		
Total	17	13	70	100		

In our study 49 patients with 34-35 weeks gestation only 29 babies were stable and out of 39 cases 32 babies were stable .

Table 11 : Correlation between mode of delivery and perinatal outcomes

Mode of delivery	Neonatal mortality	IUD	Stable	Total	Fisher's test	p-value
LSCS	15	13	67	95	2.004	0.313
Vaginal	2	0	3	5		
Total	17	13	70	100		

In our study 95 cases were delivered by LSCS in which 67 babies were stable and out of 5 cases delivered vaginally 3 babies were stable.

DISCUSSION

In this study, we studied 100 case of patients with placenta previa with gestational age >34 weeks irrespective of type of placenta previa.

In our study, maximum cases with placental abnormality ranged in 26-30 yrs age group. The mean age group of patients in our study was 26 yrs which is similar to study done by Singhal et al (2008)[12] with mean age group as 26.2 yrs in study of cases of placental abnormality in tertiary care centre. Another study by Mayerker (2008)[13], maximum number of patients were from age group 20-29 yrs.

Majority of cases 55% with placental abnormality were of third or more gravida. Our study results are similar to study done by Nagamani et al (2012)[14] in which incidence of previa was highest in multigravidas (with 2-3 viable births). Also study done by Williams (1993)[15], the highest incidence of placental abnormalities was found in multiparous group. Mahesh Kumar (2000)[16] in his study found incidence of patient previa maximum in multipara.

In our study 7% cases had history of abortion. This is similar to a study done by Addis A (2001)[17] that showed history of abortion & previous D&C increased the risk of placental abnormality upto 5 times and risk of prior caesarean section increased risk of placental abnormality upto 6 times. Study done by Ananth CV et al (2003)[18] found advancing maternal age, multiparity, previous CS and abortion and smoking, all are associated with increased risk for placental abnormality.

This shows that placental abnormalities increases as no. previous cesarean section increases.

Severe anemia (<7gm%) was found 32% cases.It is similar to a study done by P. Reddi Rani & Chaturvedula (1999)[19], severe anemia complicated 20% of cases of placenta abnormality and malpresentation was seen in 13% cases whereas study done by P. Reddi (1999)[19] showed incidence of malpresentation as 20%.

Zlatink MG et al (2007)[20] stated that patient with placental abnormality were more likely to have PPH and also receive more units of blood transfusion. Predominant indication of emergency peripartum hysterectomy has changed from uterine atony to placental abnormality in recent years followed by uterine rupture in 20.6-43%, 45-.73% and 11.4-45.5% cases respectively.[21]

Suk-Joo Choi et al (2008)[22] in his study concluded that in women with placental location abnormalities, history of abortion as well as prior CS were strong antepartum risk factor for peripartum hysterectomy.

In our study, 26% neonates registered resuscitation and were resuscitated and 36% required NICU admission. On study by Rashid et al (2004)[23] 4% registered resuscitated and 20% NICU admission and neonatal deaths.

In our study mean birth weight was 2.1 kg. In study done by Poonia S et al (2016)[24], mean birth weight was 2.7 kg. Lower birth weight could be explained by the fact that the patients in our country are constitutionally small as compared to their western counterparts along with anemia, preeclampsia and abnormal placentation.

The complication of PPH was managed by intrauterine tamponade insertion whereas in study done by Akhtar L et al (2016)[25], majority (80%) of the cases developed no complications. Among complications 2% were postpartum haemorrhage which were managed by blood transfusion and oxytocin drip. The other complications were wound infection 4.6%, puerperal pyrexia 2%, UTI 2.6%, anaemia 2%, post-operative rise of BP 0.6%.

In our study perinatal mortality is more in babies having birth weight of <1.5 kg and is having no statistical significance on the mode of delivery and period of gestation which is similar to study done by Nagamani (2012).[14]

The changing trend of rising number of caesarean section stress over the need on early antenatal registration at a tertiary care centre where there is availability of skilled obstetrician, anaesthetist and neonatologist and optimum management of women by the help of early diagnosis & intervention with the help of latest diagnostic modalities, we can control the rate of caesarean sections and promote birth spacing, and mitigate the inherent risks associated with repeat caesarean deliveries and thus maternal & perinatal morbidity and mortality.

CONCLUSION

Placenta previa complicating pregnancy is responsible for significant maternal and neonatal morbidity and mortality. Majority of our patients were from rural areas with poor educational standard, low socioeconomic status and unaware of the importance of antenatal visits. Maternal and perinatal morbidity and mortality due to placenta previa is preventable, efforts should be made to bring down these rates which can be achieved by spacing pregnancies, limitation of family size. Awareness should be brought about in the rural public to avail the facilities provided by the Government.

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