Vol. 16, No. 2
ORIGINAL PAPER

GYNAECOLOGY & OBSTETRICS

MEDICAL CHANNEL
APRIL - JUNE 2010

FETAL OUT COME IN CASES OF PLACENTA PREVIA-A RETROSPECTIVE STUDY

1. **RABIA RAHEEL**
MBBS, FCPS
2. **RUMINA TABASSUM**
MBBS, MCPS, FCPS
3. **AMBREEN BHUTTO**
MBBS,
4. **HARIS RIAZ**
MBBS,
5. **RAHEELA HANIF**
MBBS,

1. ***Assistant Professor***
2. ***Associate Professor***
3. ***Resident Medical Officer***
4. ***Medical Student***
5. ***Medical Student***

Department of Gynaecology & Obstetrics
DOW MEDICAL COLLEGE AND CIVIL HOSPITAL KARACHI

Correspondence to:
RUMINA TABASSUM
Associate Professor
Department of Gynaecology
DOW MEDICAL COLLEGE, KARACHI.

ABSTRACT

INTRODUCTION: *Placenta previa is abnormal localization of placenta in lower uterine segment. This condition carries risk for maternal and fetal morbidity and mortality. This retrospective study was conducted to evaluate fetal out come in cases of placenta previa.*
METHOD; *We reviewed the records of 82 cases of placenta previa, out of these 77 met the inclusion criteria. The record of the Neonates that were admitted in NICU was retrieved from pediatric unit. Proforma was designed for this study and variables of interest were recorded on it. The data was analyzed on SPSS- version 15.*
RESULT : *Frequency of placenta previa was 3.1%%. Mean maternal age was 31.09 ± 5.38. Mean were 3.4 for parity and 4.8 for gravidity. The ratio between booked and unbooked cases was 1:3.*
Perinatal deaths were recorded in 27 (35.07 %) cases of placenta previa this accounts perinatal mortality of 10.95 per 1000 birth in this study. There were 9(11.69%) still births and 18(23.38%) early neonatal deaths. Take home (discharged) babies were 50(64.94%). Perinatal mortality was more among patients below 35 years age and those with high parity and major placenta previa, however these were not statistically significant. Perinatal mortality was high in unbooked cases, gestational age below 34 weeks and birth weight below 2.5 kgs these were significant as p-value for these variables were less than 0.05.
CONCLUSION: *Pregnancies complicated by placenta previa must be delivered in the hospitals having expertise and facilities of Neonatal Intensive Care unit.*

KEY WORDS: placenta previa, Perinatal mortality, Risk factors.

INTRODUCTION:

Placenta previa is a localization of placenta in the lower segment of the uterus over or near the internal cervical os[1]. The frequency of this condition is about 3 to 6 per 1000 deliveries. Its incidence is higher among Asian women as compared to white women.[2] Etiology of placenta previa is unknown but it is thought to be caused by repeated trauma to the endometrial tissue which leads to endometrial scarring resulting in requirement of greater area and abnormal position for placentation.[3] Scarring at placental bed also increases the risk for developing fetal growth restriction in pregnancies complicated by placenta previa [4]. A study from Pakistan reported that 84% of these cases presents with pervaginal bleeding at admission [5]

Although there is limited data on fetal outcome in cases of placenta previa, fetal morbidity and mortality are associated with it. A study conducted by Joan. M. G. Crane et al in Nova Scotia showed that there was a higher percentage of perinatal mortality in mothers with placenta previa than those without it. The study also highlighted the fact that neonatal complications due to this condition were pre-term labor, respiratory distress syndrome, congenital anomalies and anemia.[6] Premature, or preterm, delivery (between 24^{+0} to 36^{+6} weeks), typically poses the greatest risk to the fetus[7] The baby gets anemia because of blood lost as the placenta separates from the uterine wall during labour and when the uterus is incised during a Caeserean-section[8] Birth defects occur 2.5 times more often in pregnancies affected by placenta previa, the cause is presently unclear[7] it may just be coincidence of the placenta previa and birth defects, as both are relatively more common among older women [9]

The rate of admission of neonates to NICU and duration of stay in hospital were increased in pregnancies complicated with placenta previa.[6] The type of placenta previa

also affects the fetal outcome, as major placenta previa has a greater fetal morbidity than minor placenta[10]

Lack of ante-natal care is associated with increased fetal and maternal mortality, and is a matter of great concern as ante-natal is not given the due consideration as it demands in underdeveloped countries of the world such as Pakistan. Various studies have also highlighted this fact that lack of ante-natal care is associated with increased mortality as it was shown by the study conducted in Nigeria by Olusanya and Solanke[11].the changing patterns of obstetric care in Scotland reflects its effectiveness as placenta praevia showed decreasing role in preterm birth over the study period of 24years [12]

Women with placenta previa mostly need to deliver the baby by cesarean section this prevents the death of the mother and the baby. An emergency c-section may be done if the placenta covers the cervix or the bleeding is heavy or life threatening. Most complications can be avoided by hospitalizing a mother who is having symptoms, and delivering her by C-section[8]

The objective of our study is to evaluate the fetal morbidity and mortality in patient with placenta previa and to evaluate the factors that may effect fetal out come in these cases. Our aim is to develop proposal to reduce fetal complications and death in these cases.

TABLE 1:
FETAL OUT COME IN CASES OF PLACENTA PREVIA

variable	No. of cases (%)
Still birth	9 (11.69)
Live birth	68 (88.32)
prematurity	77 (100)
Early Neonatal death	18 (23.38)
Neonatal nursery admission	30 (38.96)
Take home babies	50 (64.94)

MATERIAL & METHOD:

It was a retrospective study carried out at Civil Hospital Karachi, a 1700 bed tertiary care hospital. We reviewed the records of 77 patients of placenta previa presented from July 2007 to August 2008. The study protocol was approved by the ethical and review committee of Dow University of Health Sciences.

We reviewed the records of 82 cases of placenta previa, out of these 77 met the inclusion criteria. The record of the Neonates that were admitted in NICU was retrieved from pediatric unit

The diagnosis of the cases was made through Transvaginal or transabdominal ultrasound and intraoperative finding of placental localization.

The excluded were cases of normally localized placenta, placental abruption and cases of placenta previa with multiple gestations.

We studied maternal age, parity, booking status and type of placenta previa. Our primary variables for the neonatal outcomes were gestational age in weeks, birth weight, live birth, admission in Neonatal Intensive Care Unit, stillbirth, neonatal death and take home baby (discharge from hospital). The aim of this study was to determine the frequency of placenta previa at tertiary level teaching hospital; to assess fetal out come and to propose preventive measures to improve its management

Data was analyzed on SPSS version 15.0

TABLE 2 :
DEMOGRAPHIC CHARACTERISTICS IN RELATION WITH PERIN ATAL DEATHS AND ITS SIGNIFICANCE

variable	No. of cases	Take babies home (%)	No. of PND (%)	p-value
Age				
<35yrs	63(81.82)	39(61.90)	24(38.10)	.355
>35yrs	14(18.18)	11(78.57)	3 (21.43)	
Parity				
<4	51(66.23)	46(90.20)	15(9.80)	
>4	26(33.77)	14(53.85)	12(46.15)	.207
Booking status				
Booked	20(26)	19(95.00)	1 (5.00)	
Un booked	57(74)	31(54.39)	26(45.61)	.001
Mode of delivery				
C-S	59(76.6)	42(71.19)	17(28.81)	
vaginal delivery	18(23.4)	8(44.44)	10(55.56)	.050
placenta previa				
Minor	19(24.7)	15(78.95)	4 (21.05)	
Major	58(75.3)	35(60.35)	23(39.65)	.174
Gestational age (wks)				
<34	30(38.96)	5(16.67)	25(83.33)	
34-37	47(61.04)	45(95.75)	2 (4.26)	.000
Birth weight in kg				
<2.5	27(35.06)	9(33.33)	18(66.67)	
>2.5	50(64.94)	41(82.00)	9 (18.00)	.000

by frequencies, means with standard deviations and ratios. Perinatal mortality was calculated for per 1000 birth. Fisher Exact Test was applied for p-value, <.05 was considered significant.

RESULTS:

During the study period total deliveries were 2484 out of which 77 were cases of placenta previa. Frequency of placenta previa previa was 3.10%. Mean maternal age was 31.09 ± 5.38, minimum 18 and maximum 39 years. Mean were 3.4 for parity and 4.8 for gravidity. The ratio between booked and unbooked cases was 1:3. Unbooked cases also included referred cases. .

Perinatal deaths were recorded in 27 (35.07 %) cases of placenta previa this accounts perinatal mortality of 10.95 per 1000 birth in this study. There were 9(11.69%) still births and 18(23.38%) early neonatal deaths. Take home (discharged) babies were 50(64.94%) referred to table 1.

Table 2 shows that perinatal mortality was more among patients below 35 years age and those with high parity and major placenta previa, however these were not statistically significant. In this study all (100%) women were within 37 weeks of pregnancy, there fore we evaluated perinatal mortality in patients above and below 34 weeks. Perinatal mortality was high in unbooked cases, gestational age below 34 weeks and birth weight below 2.5 kgs these were significant as p-value for these variables were less than .05

DISCUSSION:

Reported frequency of placenta previa varies from 0.6%[13] to 1.65% i.e. 3 in 200 births [14]. In our study it was 3.14%, it reflects that this condition is more common in our par t of the world.

A study reported that the frequency of placenta previa was 54.6% in a wide range of 26-35 years[13], In present study the highest number of the patients, 41 (52%) were of 30-35 years age, while it declined below and above this range. This is supported by a study from Lahore where 38.8% patients with placenta previa were between 31-36 years and the lowest between 26-29 years (16.7%) [15], However one study reported maximum (35%) of cases were of age between 36-40yrs and frequency of placenta previa decreases below this age[16]. In our study 17 (22.1%) women were experiencing their first deliveries, while 60(77.9%) had two or more previous deliveries. Study from Brazzaville University Hospital on 126 cases of placenta previa also reported that 73.6% women had and two or more previous deliveries [13]

In present study majority (74%) of patients with placenta praevia were unbooked. Similarly high (58.2%) unbooked status is reported among same category of patients [13]

Placenta previa not only poses a risk of maternal mortality but also that of the neonate. Neonatal mortality rates are 2 to 4 fold higher in placenta previa births than non-placenta previa.[17] Present study depicts an overall neonatal mortality rate of 35.07% associated with placenta previa. Our study also reflects on how different maternal and obstetrical aspects affect fetal outcome in pregnancies complicated by placenta previa . Maternal age was found to have an effect on fetal outcome. Perinatal death was 38.10% among the mothers aged below 35 years and 21.43% when maternal age was above 35 years. However a decline in preinatal mortality as maternal age increases was not statistically significant(p value .355). It was found out that booking status of the women having placenta was significant(p value .001), as perinatal mortality was 45.61%in unbooked women as compared to 5% in those who were booked. It was also higher (11.76%) in referred cases from non-tertiary units. Perinatal mortality seems to be better controlled by provision of antenatal care in booked cases. It is unfortunate to note that majority of the cases were un-booked, which is a serious concern in our part of the world. Lack of antenatal care to the patient explains higher mortality rate in this group. A study conducted in Nigeria by Olusanya and Solanke also depicted that lack of antenatal care increases neonatal mortality.[11] In another study conducted in the United States, Vintzileos Et al. concluded that neonatal mortality was higher in the absence of antenatal care in patients with risk factors such as placenta previa.[18]. Through antenatal booking early diagnosis of placenta previa, antenatal care and elective surgical intervention greatly reduces maternal and fetal complications. Furthermore antenatally visiting women with placenta previa if develops alarming symptom of painless bleeding their timely admission and in patient care provides best option for their management.[19]

There is a high incidence of cesarean section among patients with placenta previa.[20] It is reported as 85.2%[14] this is close to our study where 59 patients (76.6%) underwent cesarean section. Current study also proves the fact that those babies who are delivered by cesarean section have lower mortality rate than those with normal vaginal delivery. Preterm birth is common in pregnancies complicated by placenta previa , reported to be 44.5% [14]In our study all patients with placenta previa delivered before 37 completed weeks of gestation, 30 women were below 34 weeks and had high perinatal mortality of 25(83.33%, p value.000)babies. A population based retrospective cohort study conducted in US concludes that placenta previa triples the rate of neonatal mortality, which is mediated mainly through preterm birth[17] Another study shows 14-fold higher risk to the premature fetus in pregnancies with placenta previa[21]

53.1% weighed less than 2500 g at birth[21]

Bahar et al. in their study concluded that major placenta previa impose a greater fetal and neonatal losses than minor placenta previa.[10] this is similar to our study.

CONCLUSION:

Perinatal mortality in cases of placenta previa is high. Factors increasing lost of babies are lack of antenatal care, prematurity and low birth weight.

RECOMMENDATION

We strongly recommend antenatal care for every pregnant women and delivery of women having placenta previa should be conducted at the hospitals having facilities of Neonatal Intensive Care unit.

REFERENCES

1. Philip N. Baker, Obstetrics Ten Teachers,Publi Book Power, ed18th,Antenatal Obstetrical Complication, 2006;chap 11,125-45
2. Yang Q, Wu Wen S, Caughey S, Krewski D, Sun L, Walker MC. Placenta previa: its relationship with race and the country of origin among Asian women. Acta Obstet Gynecol Scand. 2008;87(6):612-6.
3. Scott JR. Placenta previa and placental abruption. In: Scott JR, Disaia PJ, Hammond CB, et al, eds. Danforth's obstetrics and gynecology. Philadelphia: JB Lippincott Company, 1994:489-500
4. Varma TR. Fetal growth and placental function in patients with placenta praevia. Br J Obstet Gynaecol 2005;80;4:311-5.
5. Z S Bushra , Z Asma, B Z Sher, M S Z Muhammad. Effect of Placenta Previa on fetal & maternal morbidity / mortality. Ann King Edward Med Coll 2005;11(3):205-7.
6. Joan M. G. Crane, Michiel C. Van Denhof, Linda Dodds, B. Anthony Armson, Robert Liston. Neonatal Outcomes With Placenta Previa. Obstet Gynecol 1999; 93:541–4.
7. Cunningham FG, et al. (2005). Placenta previa section of Obstetrical hemorrhage. In FG Cunningham , Leveno KJ, Bloom SL, Hauth JC, Gilstrap LC 3rd, Wenstrom KD, eds., Williams Obstetrics, 22nd ed., pp. 819–823. New York: McGraw-Hill.

8. www.nlm.nih.gov/medlineplus/ency/article/000900.htm
9. www.revolutionhealth.com/
10. Bahar A, Abusham A, Eskandar M, Sobande A, Alsunaidi M. Risk factors and pregnancy outcome in different types of placenta previa. J Obstet Gynaecol Can. 2009 ;31(2):126-31.
11. Olusanya BO, Solanke OA. Predictors of term stillbirths in an inner-city maternity hospital in Lagos, Nigeria. Acta Obstet Gynecol Scand. 2009;88(11):1243-51.PMID: 19900141
12. Norman JE, Morris C, Chalmers J The effect of changing patterns of obstetric care in Scotland (1980-2004) on rates of preterm birth and its neonatal consequences: perinatal database study. PLoS Med. 2009 Sep;6(9):e1000153. Epub 2009 Sep 22.
13. Buambo-Bamanga SF, Oyere-Moke P, Makoumbou P, Ekoundzola JR, Mayanda HF Placenta previa: maternal and fetal prognosis covering 128 consecutive cases from the Brazzaville University Hospital Center Sante. 2004 Jul-Sep;14(3):177-81
14 Loto O, Onile TG.Niger. Placenta praevia at the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife. A ten year analysis. J Clin Pract. 2008 Jun;11(2):130-3.PMID: 18817052
15. Z Naheed . Diagnosis Management and Outcome of Placenta Previa Mother & Child Jun 1998;13(2):60-6. Department of Obstetrics and Gynaecology, Shaikh Zayed Hospital, Lahore
16 M Razia, A Nazir Fetal outcome in major degree placenta praevia , Pakistan J. Med. Res. 2003; 42(1).
17 Ananth C.V, Smulian J.C, Vintzileos A.M. The effect of placenta previa on neonatal mortality: A population-based study in the United States, 1989 through 1997. Am J Obstet Gynecol. 2003; 188:1305-9
18. Vintzileos AM, Ananth CV, Smulian JC, Scorza WE, Knuppel RA. The impact of prenatal care on neonatal deaths in the presence and absence of antenatal high-risk conditions. Am J Obstet Gynecol. 2002 May;186(5):1011-6.PMID: 12015529
19. S Fehmida. Placenta previa: a 2-year analysisPak J Med Res 2003;42(2):58-60.
20. Hamisu M. Salihu, Qing Li etal. Placenta previa: Neonatal death after live births in the United States Am J Obstet Gynecol.2003; 188(5), 1305-09
21. Tuzovi? L, Djelmis J, Iliji? M. Obstetric risk factors associated with placenta previa development: case-control study Croat Med J. 2003 Dec; 44(6):728-33