

SELECTED PREGNANCY VARIABLES IN WOMEN WITH PLACENTA PRAEVA AND ITS OUTCOME**Dr. Shivani Badal*, Dr. M. S. Rajalakshmi and Prof. L. Ranjit Singh**^{1,2}PG Student, Department of Obstetrics and Gynecology, Regional Institute of Medical Sciences, Imphal.³Prof. And Head, Department of Obstetrics and Gynecology, Regional Institute of Medical Sciences, Imphal.**Corresponding Author: Dr. Shivani Badal**

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ABSTRACT

Abstract: The aim of this study was to investigate risk factors and perinatal outcomes of pregnancies complicated by placenta praevia. Records of 148 cases with placenta praevia and 1480 randomly selected controls were reviewed retrospectively. Statistical analysis was performed using Pearson's chi square method. Placenta praevia complicated 1.3% (n= 148) of all deliveries included in the study (n= 11200). Multiparity was more common in patients with placenta praevia (78.5%, p<0.001). Cases with placenta praevia had majority of male infants – 94(63.5%). Cases with placenta praevia had significant low birth weight babies (< 2500gm) – 33% , p<0.0001. It was also concluded from the study that previous abortion (OR= 0.6; 95% CI = 0.57-0.83), previous placenta praevia (OR= 4.17; 95% CI= 5.61-7.62) and previous cesarean section (OR= 9.5%; 95% CI= 3.9- 33.41) were risk factors for placenta praevia. Significant number of newborns that were delivered after placenta praevia graded had lower apgar scores less than 7 at 5 min (24.7%, p<0.0001).

Multiparity, previous placenta praevia, previous abortion and previous cesarean section are concluded as significant risk factors for placenta praevia..

KEYWORDS: Placenta praevia, Peripartum hysterectomy, Placenta accrete syndrome, Multiparity.**INTRODUCTION**

Placenta praevia is described as a placenta that is implanted in the lower uterine segment, either over or very near the internal cervical os.^[1] Placenta praevia is a rare form of impaired placentation where placenta is implanted low in the uterine cavity, covering the internal cervical ostium completely or partially, thereby preventing normal vaginal delivery. It is considered as one of the major cause of vaginal bleeding in the third trimester^[2] and a significant cause of maternal morbidity and mortality.^[3,4] The incidence of placenta praevia in pregnant women is approximately 1.3%, depending on the population investigated. A trend of increasing placenta praevia incidence was observed in the past decade mainly because of an increasing incidence of cesarean section and advanced maternal age at the time of first pregnancy.^[5,6] Although the clinical course of placenta praevia is highly suggestive, the etiology of this condition still remains obscure. The strongest connection was found between previous cesarean section^[7-9], high parity^[10] and advanced maternal age.^[11] Moreover, in some cases the results of the studies are different and deserve further evaluation.

Potential risk factors with more confounding effect on the development of placenta praevia include previous spontaneous or induced abortions^[12], increasing number

of previous cesarean sections^[13], previous placenta praevia^[14] and newborn sex at birth.^[15]

In this study, potential risk factors were evaluated and perinatal outcome of pregnancies complicated with placenta praevia were observed.

MATERIALS AND METHODS

A population based study was performed, comparing all deliveries complicated by placenta praevia to deliveries without this complication in a randomly selected control group. The study population consisted of deliveries that occurred between April 2014 and July 2015 at Regional institute of medical sciences, Imphal, Manipur. The data collected included: Maternal age, parity, gestational age, previous cesarean section and birth weight

Maternal outcome with respect to maternal age, parity, previous cesarean section, placental abruption, previous abortion and previous placenta praevia were analysed and compared with control group.

The following neonatal complications were evaluated: Apgar score at 5 min less than 7, newborn sex, abnormal presentation, birth weight less than 2500gm and NICU admission.

Statistical analyses was performed with SPSS package (version 21). To test the statistical significance of the categorical variables, the chi-square test or fisher's exact tests were used. The criteria for selection was $p < 0.05$. Odds ratio and their 95% confidence interval(CI) were calculated using regression coefficient.

RESULTS

During the study period, out of 11200 deliveries. There were 148 cases of placenta praevia. The calculated incidence of placenta praevia was 1.3% in our population of pregnant women. Analysis of potential risk factors for

placenta praevia development in the study population and controls was done. The median age of pregnant women with placenta praevia than in controls (28 vs 23, $p < 0.01$). Age group distribution revealed a significantly higher frequency of women older than 35 years in the placenta praevia group than in the control group (29 vs 15%) respectively. Women with placenta praevia were more likely to be of higher parity. The frequency of multiparous women was significantly higher in the placenta praevia group (78.5 vs 49%, $p < 0.001$). Women with previous cesarean section had a 2.5 fold higher risk for placenta praevia development.

Maternal factors and morbidity characteristics of women with and without placenta praevia

Risk factors	Cases N=148		Control N=1480		Odds ratio	95% CI	p-value
	n	n%	n	n%			
Maternal age							
<35 years	111	75	1258	85	0.69	0.57-0.8	$p < 0.001$
>35 years	37	25	222	15			
Parity							
Nulliparous	32	21.5	754	51	0.71	0.67-0.89	$p < 0.002$
Multiparous	116	78.5	726	49			
Previous CS							
Yes	33	22	194	13.1	9.5	3.91-33.4	$p < 0.0001$
No	115	78	1286	86.9			
Gestational age							
<37 weeks	62	41.9	80	5.4	12.58	7.79-21.2	$p < 0.0001$
>37 weeks	86	58.1	1400	94.6			
Placental Abruption							
Yes	53	35.5	74	5	12.07	4.17-32.9	$p < 0.001$
No	95	64.5	1406	95			
Previous placenta praevia							
Yes	5	3.2	6	0.4	4.17	5.61-7.62	$p < 0.0001$
No	143	96.8	1474	99.6			
Previous abortion							
Yes	44	30	74	5	0.60	0.57-0.83	$p < 0.002$
No	104	70	1406	95			

Among women with placenta praevia, there was a significantly higher frequency of those with previous cesarean sections. The number of previous spontaneous/induced abortions was also significantly higher in the group of women with placenta praevia (30% vs 5%, $p < 0.001$). The statistical rate of male newborn was significantly higher in the placenta praevia group in comparison with control group (63.5% vs 51.2%, respectively). The risk of having preterm delivery was

almost 8 fold higher in the placenta praevia group (41.9% vs 5.4%, $p < 0.0001$). Infants of the mothers with placenta praevia had significantly lower 5th min apgar scores than their controls (OR = 0.71, CI= 0.74-0.97, $p < 0.0001$). However infants of mothers with placenta praevia had significantly higher NICU admission than infants of the mothers in control group (30.9% vs 7.1%, $p < 0.001$).

Neonatal complications

Complications	Cases N=148		Control N=1480		Odds ratio	95% CI	p-value
	n	n%	N	n%			
Apgar score@ 5 mins							
< 7	37	24.7	38	2.6	0.71	0.74-0.97	$P < 0.0001$
>7	111	75.3	1442	97.4			
NICU Admission							
Yes	46	30.9	105	7.1	0.70	0.57-0.83	$p < 0.002$
No	102	69.1	1375	92.9			
Birth weight							
≤ 2500 gm	49	33	90	6.1	10.71	6.54-17.51	$p < 0.0001$
>2500 gm	99	67	1390	93.9			
Newborn sex							

Male	94	63.5	758	51.2	1.08	1.07-4.06	p <0.001
Female	54	36.5	722	48.8			
Presentation							
Normal	75	50.5	133	9.0	3.05	6.52-14.21	p <0.0001
Abnormal	73	49.5	1347	81.0			

DISCUSSION

Placenta praevia complicated 1.3% of all deliveries, which was above the range of 0.3-0.8% observed in other studies^{2,4,16}. Present study showed the incidence of placenta praevia (1.3%) which is high and not in agreement with those studies. Several studies that were conducted around the world confirmed a 2-5 fold increased risk for development of placenta praevia in women with history of previous cesarean section.^[2,15] Our study also confirmed that the frequency of previous cesarean sections was significantly higher in placenta praevia group than in the control group, which corresponded to 2.5 fold higher risk for placenta praevia group as found in those studies.

The role of previous abortions which may be either spontaneous or induced, was found to be important for placenta praevia development in our study population. The percentage of previous abortions and history of curettage was significantly higher among women with placenta praevia.^[11,19] The mechanism of previous abortion as a predisposing factor to development of placenta praevia could be explained by possible endometrial damage that occur during repeated abortions which impedes successful fundal implantation of placenta. Our study results shows similarities with those studies contrary to some previous studies that showed an association between male sex of the newborn and placenta praevia.^[14,20] Our study showed statistically significant predominance of male newborns, is in agreement with those studies.

The role of previous placenta praevia, which implies genetic base for placenta praevia development, was important in this study. Four women with placenta praevia had a history of placenta praevia, among them 3 patients had partial placenta accreta and they underwent peripartum hysterectomy. However there are some indications from other studies that previous placenta praevia could be a risk factor for its development in current pregnancy. The recurrence risk for placenta praevia is 6 times higher than in general population of pregnant women^[17], our study findings are in agreement with those studies.

Obstetric and neonatal care significantly reduced perinatal mortality associated with placenta praevia. However, preterm delivery still remains one of the main problems.^[5,18] In our study, 41.9% of women with placenta praevia delivered prematurely and 30.9% NICU admissions were there, But there was no maternal mortality.

CONCLUSION

The results of present study indicate that knowing obstetric factors predisposing women for placenta praevia development is important for choosing adequate preventive measures for these women. Physician should suspect placenta praevia especially if woman is over 35 years of age, with 3 or more previous pregnancies, parity of 2 and more with increased number of previous abortions and cesarean sections. These women should receive counselling as soon as pregnancy is confirmed especially if they are non compliant with possible poor antenatal care. Careful monitoring of these high risk pregnancies is of utmost importance, especially regarding careful ultrasonographic examination with exact placental location during the second trimester of pregnancy. Early recognition and proper monitoring of placenta praevia could minimize the possibility of poor outcome in sudden massive vaginal bleeding.

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