

Evaluation of Risk factors and Obstetric and Perinatal Outcome in Abruptio Placenta

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Abstract:

Objective: To determine the risk factors and to find out the obstetric and perinatal outcome in patients with placental abruption.

Study Design: Retrospective observational study.

Materials and Methods: In present study 124 patients with abruptio placentae in third trimester were included. A detailed obstetrics history was obtained and maternal high risk factors were noted. Examination, investigation and detail of intrapartum, postpartum period and associated complications were recorded.

Results: Incidence of abruptio placentae was 4.81%. Majority (58.87%) were primi with commonest age group being 26-30 years. Risk factors associated were anaemia(57.26%), pregnancy induced hypertension(31.45%), eclampsia(13.7%) Chronic hypertension(8.87%), Gestational diabetes mellitus(12.09%) and Premature rupture of membrane(16.94%). 44% patients came in labour, out of which (35.48%) delivered vaginally and (45.97%) needed caesarean section. Maternal complications were postpartum hemorrhage in (22.59%), disseminated intravascular coagulation in (20.16%), puerperal sepsis in (17.5%), Hemorrhagic shock in(12.90%), Acute renal failure in (10.48%) were noted and 2 patients needed mechanical ventilation. No maternal mortality was noted. (47.58%) women delivered live babies while (52.42%) were stillborn. Out of these 59 live born babies 7 died in early neonatal period due to prematurity. Therefore overall perinatal mortality was 58.07%

Conclusion: Placental abruption is an independent risk factor for perinatal mortality. Therefore, risk factors should be carefully evaluated to improve outcome.

Keywords: Abruptio Placentae, Maternal outcome, Perinatal outcome, Risk factors.

I. Introduction

It is bleeding after premature separation of a normally situated placenta. The detached portion of the placenta is unable to exchange gases and nutrients; when the remaining fetoplacental unit is unable to compensate for this loss of function, the fetus becomes compromised. Placental abruption complicates 0.5-5% of pregnancies [1,2]. The incidence appears to be increasing, possibly due to increases in the prevalence of risk factors for the disorder[3,4]. Primary cause of abruption is not known but the main precipitating and predisposing factors of abruption are age, parity, anaemia, pregnancy induced hypertension (PIH), eclampsia, Gestational diabetes mellitus(GDM), Premature rupture of membrane(PROM), Previous medical termination of pregnancy(MTP) or Lower segment cesarean section(LSCS) were most common associated risk factors[5]. Although even minor trauma may be associated with an increased risk of preterm birth, severe maternal trauma is associated with a six-fold increase in risk of abruption [6]. Abruption is a significant cause of maternal and perinatal morbidity and perinatal mortality. The majority of perinatal deaths (77%) occur in utero, deaths in the postnatal period are primarily related to preterm delivery [7-9]. The aim of present study was to determine the risk factors for abruptio placentae together with the maternal and fetal outcome.

II. Material & Methods

Present study was conducted at Department of Obstetrics and Gynecology in Kamineni Institute of Medical Sciences, Narketpally from March 2013 to February 2015. It was a Retrospective observational study conducted on 124 pregnant women who were in third trimester with placental abruption. All cases of Antepartum haemorrhage(APH) like placenta previa, extraplacental and indeterminate causes other than abruption were excluded. A detailed obstetrics history was obtained and maternal high risk factors like PIH, GDM, polyhydramnios etc were noted. As 95% patients were admitted as emergency, placental abruption were suspected depending on clinical features of vaginal bleeding, uterine tenderness, hypertonic uterus and diagnosis

was confirmed by presences of retroplacental clots. After initial resuscitation, mode of delivery was decided depending on state of mother and fetus. Fetal wellbeing was assessed with ultrasonography and cardiotocography. Maternal outcome measures were followed for mortality and morbidity which can be due to hemorrhagic shock, DIC, ARF, PPH, puerperal sepsis and post operative mechanical ventilation. Fetal outcome studied were perinatal mortality (stillborn and neonatal death), Intrauterine growth restriction (IUGR), prematurity, APGAR score, birth weight, admission to neonatal intensive care unit (NICU). All information was gathered. Results were analyzed & statistical analysis was done with Chi-Square test. p value < 0.05 was considered as significant.

III. Results

The total number of deliveries during the study period was 2576. Patients with abruptio placenta were 124, giving a incidence of 4.81%.

“Table-1” Distribution according to demographic profile

S.No	Parameters	Number of patients (n=124)	Percentage
1	ANC Status*	Booked	41
		Unbooked	83
2	Socioeconomic Status*	Poor	63
		Middle	39
		High	22
3	Age (years)	21-25	23
		26-30	57
		31-35	31
		>35	13
4	Parity	Primigravida	73
		Multipara	41
		Grandmultipara	10
5	Gestational Age (weeks)*	29-32	32
		32-36	69
		37 and above	23

*Significant p value < 0.05

Majority of patients were unbooked and belongs to poor socioeconomic status. Majority (45.97%) of women were between 26-30 years of age group and maximum were primigravida. Mainly abruptio was seen in women (55.65%) in 32-36 weeks of gestational age.

“Table-2” Distribution of risk factors for abruptio placentae

S.NO	Risk factors	Number of patients (n=124)	Percentage	
1	Medical disorder	Anaemia	71	
		PIH	39	
		Chronic Hypertension	11	
		Eclampsia	17	
		GDM	15	
2	Polyhydramnios	27	21.77%	
3	PROM	21	16.94%	
4	Trauma	5	4.02%	
5	History of addiction	Tobacco chewing	8	6.44%
6	Obstetrics history of	MTP	19	
		LSCS	27	
		Abruptio	9	
7	Unknown cause	31	25%	

A total of 71(57.26%) women were anemic. Pregnancy induced hypertension was seen in 31.45%, Polyhydramnios in 21.77%, PROM in 16.94% and diabetes in 12.09%. Out of 5 trauma cases, 3 patients got abruptio immediately after road traffic accident. Two patients had fetal bradycardia and underwent caesarean section.

“Table-3” Mode of delivery

S.No	Mode of delivery	Number of patients (n=124)	Percentage
1	Normal vaginal delivery	44	35.48%
2	Assisted Breech delivery	7	5.65%
3	Forcep	11	8.87%
4	Vacume Extraction	5	4.03%
5	Caesarean section	57	45.97%

Regarding mode of delivery, 44% patients came in active labour, (35.48%) women delivered vaginally by artificial rupture of membrane(ARM) and oxytocin augmentation and (45.97%) underwent caesarean section . Main indication for LSCS was fetal distress, other were maternal shock, previous LSCS and impending uterine rupture.Two patients after caesarean section had peripartum hysterectomy due to severe PPH.

“Table-4” Distribution of maternal morbidity

S.NO	Maternal complication	Number of patients (n=124)	Percentage
1	PPH	28	22.59%
2	DIC	25	20.16%
3	Puerperal sepsis	21	17.5%
4	Haemorrhagic shock	16	12.90%
5	ARF	13	10.48%
6	Mechanical ventilation.	2	1.61%

Major maternal complication seen was postpartum hemorrhage in 22.59 % and disseminated intravascular coagulation in 20.16 % .Two patients needed mechanical ventilation. There is no maternal mortality was noted.

“Table-5” Distribution of Fetal outcome

S.NO	Fetal outcome	Number of patients (n=124)	Percentage
1	Live Babies	59	47.58%
2	Still born Babies	65	52.42%

(47.58%) women delivered live babies while (52.42%) were stillborn. Out of these 59 live born babies seven died in early neonatal period due to prematurity. Therefore overall perinatal mortality was 58.07%. Fifty two live babies 11 had low APGAR score <7 at 5 minute, 9 were premature and 8 were intrauterine growth restricted (IUGR).

IV. Discussion

Abruptio placenta remains a major cause of perinatal morbidity and mortality.The incidence of abruptio placentae in present study is 4.81% comparable with others 0.5-5%[1,2].This is due to contributing factors like low socioeconomic conditions,ignorance about antenatal care and poor control of predisposing and precipitating factors. Increased incidence was seen in patients belonging to rural areas and unbooked. The same observation is also evident from other studies [2,10]. Relation between age ,parity and incidence of abruption appears to be varying in different studies. Abruption can occur at any stage in pregnancy but 32-36 weeks appears most vulnerable period and incidence rates vary considerably depending on the etiology [11](Table-1).

This study was conducted in a tertiary care hospital which is situated in rural area.Therefore patients with associated medical disorder was high in our scenario. Majority of patients were anemic. These observations are also seen in other studies[2,12].This high frequency of anemia could be due to pre-existing nutritional deficiency and then superimposed by abruption. An association of anemia,diabetes and hypertension with placental abruption was observed in present study, which is similar with other studies[13,14].Altered fetoplacental angiogenesis during early pregnancy in anaemic woman may partially explain this increased risk[15].Hypertensive vasculopathy may affect placental vasculature which may succumb to sudden rise in blood pressure.Diabetes can causes and aggravate the placental dysfunction thus causing placental abruption[16]. Although even minor trauma may be associated with an increased risk of preterm birth, severe maternal trauma is associated with a six-fold increase in risk of abruption [6,17].PROM is significant underlying cause leading to abruption[11]. Smoking , tobacco chewing and previous obstetrics history has to be carefully evaluated as damage to the endometrium especially basalis layer may lead to defective neo-angiogenesis in later pregnancies. Therefore previous LSCS,previous MTP,previous abruption poses significant risk of abruption in subsequent pregnancy[18-20]. (Table-2).

As it is a catastrophic event, mode of delivery has to be carefully selected .Delivery outcome of our study shows that majority of women delivered vaginally, caesarean section being only performed in cases where fetus was alive or there was very severe abruption. The reason for this was that most of the babies were already dead and in many cases patients were in advanced labour [2,12] .(Table-3).

Among maternal complications PPH was commonest, followed by disseminated intravascular coagulation, puerperal sepsis, shock and renal failure, which is similar to other[21]. There is no maternal mortality was noted. Maternal mortality incidence varies from <1% to 8.3%[11].This can be attributed to improved obstetric care, timely interventions and availability of blood and blood components. (Table-4).

Fetal mortality seems to be due to abruption itself, its risk factors as well as the prematurity. This high mortality is comparable with other studies[22] (Table-5). Perinatal morbidity and mortality can be reduced by identification of risk factors ,good antenatal care, improved nutrition, careful vigilance of at risk cases and timely decisions.

V. Conclusion

Placental abruption is an independent risk factor for perinatal mortality. Since the incidence of placental abruption has increased during the last decade, risk factors should be carefully evaluated to improve outcome. Antenatal services should be provided to all women specially to poor socioeconomic class. Abruptio placentae should be managed in centers where there is advanced maternal and neonatal facilities.

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