

A Study of Fetomaternal Outcome in Abruptio Placenta

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Abstract

Background: Placental abruption is one of the major causes of vaginal bleeding in the later half of pregnancy and it is a significant cause of maternal and perinatal morbidity and mortality. Timely diagnosis and effective treatment can reduce the number of maternal and perinatal complications. **Methods:** This was a prospective study carried out in 100 patients admitted to the department of obstetrics and gynaecology, Civil hospital, Ahmedabad, with clinical diagnosis of abruptio placenta and period of gestation of 28 weeks or more, between September 2018 to August 2020. **Results:** Highest incidence (55%) of abruption was among age group of 21-25 years, between Para 2 to Para 4 (63%) and between 33-36 weeks of gestation (43%). The most common presenting symptom was vaginal bleeding(83%). Most common etiological factor was unknown(45%). Majority patients had revealed abruption(47%). Most common complication was DIC(12%). Overall Perinatal mortality was 58%. **Conclusion:** Placental abruption is an emergency condition, but if timely diagnosed and managed, the maternal and perinatal mortality can be reduced.

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I. Introduction

Abruptio placenta, is the separation of the placenta-either partially or totally- from its implantation site before delivery of the fetus.

Many studies have been conducted regarding its etiology and effectiveness of management. Still it has been one of the common obstetric emergency producing significant maternal and fetal morbidity and mortality, especially in developing countries.

It has wide variation in incidence ranging from 1:60 to 1:250. The etiology of placental abruption is not known in majority of the cases. The leading causes of abruption are prior abruption, pre eclampsia, chronic hypertension, multifetal gestation, polyhydramnios, preterm rupture of membranes, cigarette smoking and thrombophilias. Though it is a Clinical diagnosis, the advent of ultrasonography has helped it to differentiate it from the other cause of APH like Placenta previa, with great precision. With liberal availability of blood, blood products and coagulation factors, the management of shock and disseminated intra vascular coagulation has produced good results over the last few decades.

The early delivery of the fetus by either augmented vaginal delivery or cesarean section decreases the maternal and fetal morbidity and mortality.

The present study is a prospective study done to know the impact of this disorder and effect of various parameters on the fetomaternal outcome.

II. Aims And Objectives

1. To know the risk factors for abruptio placenta and evaluate its effect.
2. To study the maternal morbidity during pregnancy and delivery in abruptio placenta.
3. To study the fetal outcome in abruptio placenta.
4. To suggest necessary intervention for prevention in subsequent pregnancies.

III. Materials And Methods

The present study was carried out in 100 patients admitted to department of Obstetrics and Gynaecology, Civil Hospital, Ahmedabad, with clinical diagnosis of abruptio placenta and period of gestation of 28weeks or more, between September 2018 to August 2020.

As accidental hemorrhage can also be diagnosed retrospectively, cases with retroplacental clots/depression (Grade-O accidental hemorrhage) were also included in this study. Those with atypical signs and symptoms were also observed till delivery and excluded from the study if there were no clinical evidence of placental abruption.

A detailed history of the patient was taken regarding name, age, socio economic states, address, occupation, duration of amenorrhea, loss of fetal movements, history of trauma, any history suggestive of Pregnancy Induced Hypertension, previous medical disorders, outcome of previous pregnancies.

A detailed obstetric history was taken including previous deliveries, mode of deliveries, associated with previous history of hypertension, abruption, previous IUD or still birth, or any other antepartum, intrapartum or post partum complications.

Patient's general physical, systemic and obstetrical exam as carried out and relevant laboratory tests and imaging were performed. Perinatal outcome like birth condition, birth weight and neonatal complications were recorded. The type of abruption was also noted.

IV. Results

In our study carried out from September 2018 to August 2020, we studied fetomaternal outcome in 100 cases of abruption placentae out of which 5 cases had twin pregnancy. The total number of deliveries, with more than 28 weeks of gestation were 15,094 out of which 100 cases of placental abruption were studied.

TABLE NO.1: ABRUPTIO PLACENTA INCIDENCE IN BOOKED AND EMERGENCY PATIENTS

	No. Of cases	Percentage
Booked	26	26%
Emergency	74	74%

TABLE NO.2: ANTENATAL CARE STATUS IN PATIENTS WITH ABRUPTIO PLACENTA

	No. Of cases	Percentage
ANC Taken	87	87%
ANC not taken	13	13%

TABLE NO.3: ABRUPTIO PLACENTA AND MATERNAL AGE

Age group (years)	No. Of cases	Percentage
< 20	13	13%
21-25	55	55%
26-30	22	22%
31-35	6	6%
>35	4	4%

TABLE NO.4: ABRUPTIO PLACENTA AND PARITY

Parity	No. Of cases	Percentage
Primi	27	27%
2nd to 4th	63	63%
>4th	10	10%

TABLE NO. 5: ABRUPTIO PLACENTA AND GESTATIONAL AGE

Gestational age	No. of cases	Percentage
28-32 weeks	36	36%

36. Wweeks	43	43%
>=37 weeks	21	21%

CHART NO.1: DISTRIBUTION OF CASES BASED ON SIGNS AND SYMPTOMS

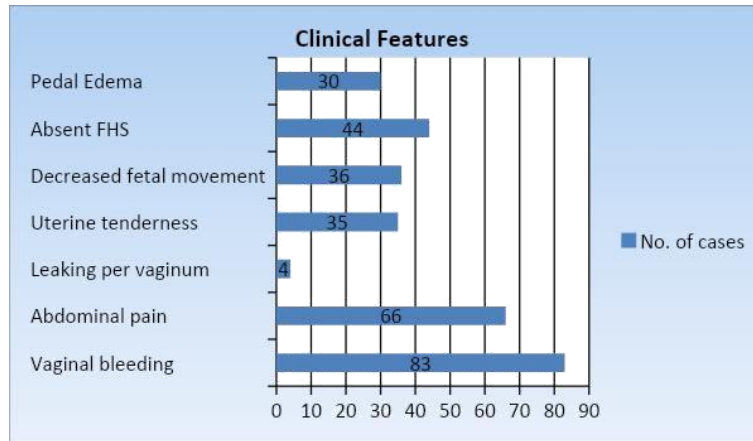


CHART NO.2: ETIOLOGICAL FACTORS IN ABRUPTIO PLACENTA

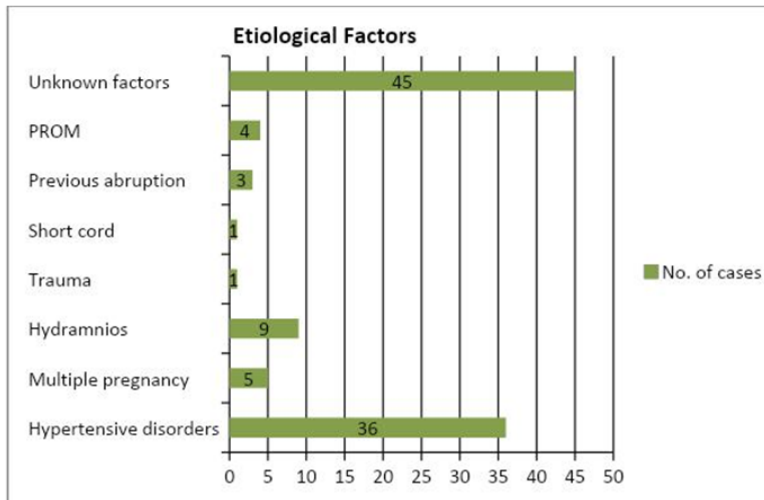


TABLE NO. 6: TYPES OF ABRUPTIO PLACENTA

Type of abruption	No. of cases	Percentage
Mixed	36	36%
Concealed	17	17%
Revealed	47	47%

TABLE NO. 7: GRADES OF PLACENTAL ABRUPTION

GRADES	No. of cases	Percentage
Grade -0	3	3%
Grade-1	19	19%
Grade-2	47	47%
Grade-3	31	31%

TABLE NO. 8: BEDSIDE COAGULATION TESTS IN ABRUPTIO PLACENTA

Type of coagulation test	Results	No. of cases	Percentage
BT	Normal	92	92%
	Prolonged	8	8%
CT	Normal	92	92%
	Prolonged	8	8%
Clot observation test	Normal	92	92%
	Abnormal	8	8%
Clot retraction test	Normal	92	92%
	Abnormal	8	8%

TABLE NO.9: MODE OF DELIVERY IN ABRUPTION

Mode of delivery		No. of cases	Percentage
Vaginal delivery (n=85)	No instrumentation	74	74%
	Vacuum assisted	8	8%
	Forceps	3	3%

	LSCS	15	15

TABLE NO.10: METHODS OF INDUCTION IN ABRUPTIO PLACENTA

Methods of induction	No. of cases (n=85)	Percentage
ARM + oxytocin	43	50.5%
Oxytocin	26	30.6%
Prostaglandins	16	18.9%

TABLE NO.11: VOLUME OF RETROPLACENTAL CLOT IN ABRUPTION

Volume	No. of cases	Percentage
<100 cc	12	12%
100-500 cc	65	65%
>500 cc	23	23%

TABLE NO. 12: ABRUPTION AND BLOOD TRANSFUSION

No. of transfusions required	No. of cases	Percentage
0	35	35%
1	23	23%

2	14	14%
3	10	10%
4	6	6%

>5	12	12%
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TABLE NO. 13: COMPLICATIONS IN ABRUPTIO PLACENTA

Complication	No. of cases	Percentage
Shock	9	9%
Renal failure	6	6%
Post partum hemorrhage	8	8%
Couvelaire uterus	3	3%
HELLP	10	10%
Disseminated intravascular coagulation	12	12%
Obstetric hysterectomy	1	1%
Maternal mortality	2	2%

TABLE NO.14: PERINATAL MORTALITY IN ABRUPTIO PLACENTA

	Alive	Dead	Total (n=105)	Percentage	Total fetal mortality
Vaginal	36	52	88	59%	
Cesarean	8	9	17	53%	58%
Total	44	61	105	-	

TABLE NO.15: INDICATIONS FOR CESAREAN SECTION

Indication	No. Of cases	Percentage
Fetal distress	6	40%
Primi breech	1	7%
Prev 2 CS	3	20%
Deterioration of maternal condition	5	33%

TABLE NO.16: FETAL OUTCOME RELATED TO GRADES OF ABRUPTION

Grade	No. of patients	Infants alive on admission	Infants dead in utero	Intrapartum death	Neonatal deaths	Infants survived
Vaginal delivery						
0	3	3				3
I	13	14(1T)	-	-	-	14 (1T)
II	45	35	11 (1T)	10	6	19
III	24	-	25 (1T)	-	--	
Total	85	52	36	10	6	36
Cesarean section						
0	0	0	0	0	0	0
I	6	8(2T)	-	0	0	8(2T)
II	2	1	1	0	1	0
III	7	-	7	-	-	-
Total	15	9	8	Nil	1	8

TABLE NO. 17: ABRUPTION AND FETAL BIRTH WEIGHT

Birth weight grams	Infants alive on admission	Infants dead in utero	Died intra partum	Neonatal	Infants Survived
Vaginal					
<1000	-	4	-	-	-
1000-1499	16	16 (1T)	7	5	4
1500-2499	19(1T)	13 (1T)	3	1	15

2500+	17	3	0	0	17
Total	52	36	10	6	36
Cesarean section					
<1000	-	-	-	-	-
1000-1499	-	1	-	-	-
1500-2499	6(2T)	4	-	-	6(2T)
2500+	3	3	-	1	2
Total	9	8	-	1	8

V. Discussion

In our study carried out from September 2018 to August 2020 the fetomaternal outcome in 100 cases of placental abruption was studied. The majority of the cases visited in the emergency department were not booked(74%). About 13% of the cases had not taken routine antenatal visits. The highest incidence (55%) of placental abruption was found among the maternal age group of 21-25years. The lowest age found was 18 years and the highest was 37 years. The majority of cases were between Para 2 to Para 4 (63%) as they formed the largest group of women who delivered in our study. Maximum incidence was found among those who were between 33-36 weeks of gestation (43%).

The most common symptom with which the patient presented was vaginal bleeding (83%), followed by abdominal pain (66%), decreased fetal movements (36%), uterine tenderness (35%) and leaking per vaginam (4%). Among the signs FHS was absent in 44%, pedal edema was present in 30% patients.

Among causative factors, majority were unknown (45%). Amongst the known factors, hypertension was present in 36% (2 cases of chronic hypertension), hydramnios in 9%, multiple pregnancy in 5%, PROM in 4%, trauma in 1%, short cord in 1%, previous abruption in 3% of the cases.

Majority of the patients in this study had revealed abruption (47%). The incidence of mixed type was 36% and that of concealed type is 17%. Majority of the patients had grade 2 abruption (47%), followed by grade 3 (31%) and the least being grade 0 (3%).

Bleeding time, clotting time, clot observation test and clot retraction test were abnormal in 8% of cases. Low platelet count was found in 8%.

85% of the cases were delivered by vaginal delivery and 15 % of the cases required cesarean section for fetal distress or maternal indication. Amongst vaginal delivery, 8 cases were delivered by vacuum assistance and 3 cases by forceps. Majority of the cases delivered vaginally were delivered by ARM + oxytocin induction (50.5%). About 65% of the cases had 100-500 cc retroplacental clots. The largest retroplacental clot was of 800cc.

About 35% of the cases did not require any blood transfusion, 23% cases required 1 transfusion, 14% cases required 2 transfusions, 10% cases required 3, 6% cases required 4 and 12% cases required more than 5 blood transfusions (including blood components).

About 12% cases had DIC, 10% had HELLP, 9% were complicated with shock, 6% had renal failure, 8% had post partum hemorrhage, 3% had couvelaire uterus and 1% had undergone obstetric hysterectomy for post partum hemorrhage.

Overall Perinatal mortality was 58%, the same for vaginal delivery was 59% and LSCS was 53%.

In Grade 1 abruption, there was no difference in the route of delivery, fetal salvage was 100%.

When fetal outcome was analyzed based on route of delivery and birth weight, it was found that, in the range of 1500 – 2499g the fetal salvage by vaginal route was 15/19 (79%) and that with caesarean section was 6/6 (100%). In the category weighing 2500g and above, 17/17 survived by vaginal delivery (100%) and among caesarean delivery, 2 survived out of 3 (66.6%).

The maternal mortality in this study was 2%. The cause being

Case 1: Cardio respiratory arrest with DIC, acute renal failure and severe anemia

Case 2: Post partum hemorrhage with acute fulminant hepatic failure with acute renal failure in patient having acute fatty liver of pregnancy.

VI. Conclusion

The incidence of abruption is significantly high with poor maternal and perinatal outcomes. The high incidence of poor outcomes is greatly related to increased parity, lack of health education, lower socio economic status, poor nutrition, illiteracy, lack of regular health check ups, difficulties in referral from a remote place to a well equipped and fully facilitated tertiary care centre and inadequate neonatal care facilities.

The timing at which abruption will occur, can not be predicted before hand in any case as the condition is an accidental occurrence. However, the incidence can be reduced by taking measures to eliminate the risk factors leading to abruption. In antenatal patients with risk factors for abruption, the treating doctor should be vigilant enough to suspect and detect the condition at the onset itself and should take immediate measures to either manage the patient or to timely refer the patient to a higher centre.

Early recognition and prompt delivery is the key to better prognosis in the management of abruptio placentae. The increase in the availability of blood products, better intensive care units and better neonatal intensive care units has improved the maternal and fetal survival and decreased the maternal and perinatal morbidity.

Thus with proper antenatal, intra natal and post natal care, the fetomaternal outcome in the cases of abruptio placenta can be improved.

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