



MATERNAL & PERINATAL OUTCOME IN CASES OF ABRUPTIO PLACENTAE

Gynaecology

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ABSTRACT

Background: Abruption placenta is an obstetric catastrophe in which normally situated placenta separates from its site of implantation before delivery. It has been variously called as placental abruption, abruption placenta or accidental haemorrhage. The maternal morbidity & mortality is due to severe haemorrhage that follows this complication.

Methods: It was the prospective study of total 30 patients admitted with the diagnosis of abruption placenta or developing abruption even after an admission.

The approval of an institutional ethical committee was taken. Informed consent was taken from each subject. Examination & investigations were done.

Maternal & perinatal outcome in our study were compared with previous studies.

Results: 66.66% of cases presented with both abdominal vaginal bleeding and abdominal pain; 26.66% patient had hypertonic uterus; 6.66% patients had fetal demise. 18 out of 30 (60%) patients were diagnosed to have pregnancy induced hypertension. In our study of 2 patients of placental abruption severe enough to cause fetal demise, out of which 1 patient had pregnancy induced hypertension.

86% patients in our study were diagnosed clinically & ultrasonographic evidence of abruption was seen in only 13% of cases. Perinatal mortality in our study was 6.66%. (n=30).

Conclusions: Abruption placenta is found with equal severity in young primiparous patients making it necessary to consider this entity more seriously. Perinatal outcome is better if pregnancy is prolonged till 33 weeks of gestation. Ultrasonography is not a sensitive method of diagnosing abruption placenta. Thus clinical signs & symptoms of patients are main stay in diagnosis of placental abruption.

KEYWORDS

Abruption placenta, Perinatal, Ultrasonography

INTRODUCTION:

Abruption placenta is recognised as one of the most serious complications of pregnancy, responsible for as much as of 25% of all perinatal deaths in Knab DR series¹. It is also associated with significant maternal morbidity and mortality in 1% of cases². The maternal morbidity & mortality is due to severe haemorrhage that follows this complication. The fetal morbidity & mortality is due to reduced placental surface area for oxygenation. The maternal effect of abruption depends primarily on its severity, whereas its effect on fetus is determined by both its severity & the gestation age at which it occurs. So it is necessary to diagnose cases of abruption placenta as early as possible & prompt delivery should be carried out in tertiary care institutes with adequate maternal & neonatal intensive care facilities.

MATERIALS & METHODS: It was the prospective study of total 30 patients admitted with the diagnosis of abruption placenta or developing abruption even after an admission. The approval of an institutional ethical committee was taken. Informed consent was taken from each subject.

Design of study: Single centre prospective study.

No. of subjects in the study: 30

Period of study: April 2012 to April 2013.

Inclusion criteria: All cases with signs & symptoms of abruption placenta were included. Patients were diagnosed clinically depending upon signs & symptoms of abruption placenta or retrospectively by finding of retroplacental clot.

Exclusion criteria:

Patients of antepartum haemorrhage due to causes other than abruption placenta like

- Placenta previa
- Vasa previa
- Local cervico-vaginal lesions

Detailed history was taken & clinical examination was carried out.

Maternal consequences and complications like-

Hypovolemic shock, postpartum haemorrhage, coagulopathy (DIC), acute renal failure & need for blood & blood products transfusion, need for operative delivery, need for MICU admission was recorded.

Perinatal outcome was recorded in terms of-

Low birth weight, IUGR, prematurity, birth asphyxia, need for NICU admission & duration of NICU stay, intrauterine death.

RESULTS-

Age wise distribution of patients : Out of the 30 cases, in our study most belonged to age group 20 to 25 years (73.3%). 6 patients were between age group 26 to 30, while only 2 patients were above age of 30 years.

Age	No. of patients	Percentage
20 – 25 years	22	73.3 %
26- 30 years	6	20 %
>30 years	2	6.66 %

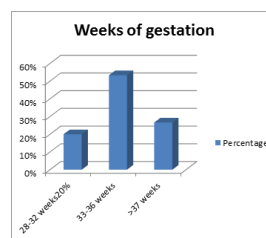
PROFILE OF PATIENTS:

Out of 30 cases , 13 patients were primigravida, 14 patients were second gravida. Only 2 patients were third gravida and 1 patient fourth gravida.

	No. of patients	Percentage
Primigravida	13	46.66%
Multigravida	17	53.35%

WEEKS OF GESTATION:

Out of 30 cases, 16 patients (53.33%) were between 33-36 weeks of gestation. 8 patients (26.66%) were full term patients & 6 patients were less than 32 weeks.



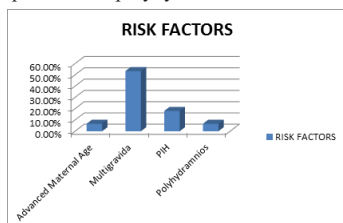
SIGNS AND SYMPTOMS:

20 patients (66.66%) presented with complaints of abdominal pain & vaginal bleeding. 7 patients (23.33%) had only vaginal bleeding. 8 patients (26.66%) presented with hypertonic uterus. 2 patients (6.66%) presented with fetal demise.

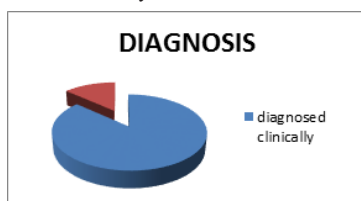
Signs and symptoms	No. of patients	Percentage
Abdominal pain & vaginal bleeding	20	66.66%
Only vaginal bleeding	7	23.33%
Hypertonic uterus	8	26.66%
Fetal demise	2	6.66%

RISK FACTORS:

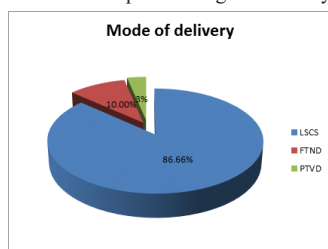
Pregnancy induced hypertension (PIH) was seen in 18 patients (60%). 2 patients (6.66%) advanced maternal age. 17 patients (53.35%) were multigravida. 2 patients had polyhydramnios.

**DIAGNOSIS:**

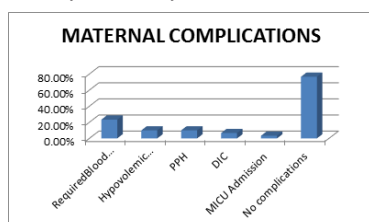
4 cases were diagnosed retrospectively after delivery by observing retroplacental clot. Remaining 26 cases (86.66%) were diagnosed clinically depending on signs & symptoms of abruption out of which only 8 cases were confirmed by USG.

**MODE OF DELIVERY:**

26 (86.66%) patient were delivered by emergency lower segment caesarean section. 3 patients were delivered as full term vaginal delivery. 1 patient delivered as preterm vaginal delivery.

**Indication for LSCS :-**

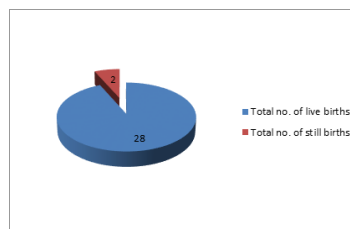
24 LSCS were performed for the indication of fetal distress. 2 LSCS were performed for the indication of maternal compromise. Maternal consequences and complications :- 23 patients of abruption were discharged without any complication. 7 patients required blood transfusion. 2 patients had hypovolemic shock. 3 patients had postpartum haemorrhage. 2 patients developed DIC. 1 patient required MICU admission. No maternal mortality in our study.

**NEONATAL OUTCOME :-**

In our study of total 30 births, 28 were live births and 2 were stillbirths.

Total no. of births	30
Total no. of live births	28
Total no. of still births	02
Total no. of neonatal deaths	0

Thus perinatal mortality in our study was 6.66%.

PERINATAL MORTALITY:**BIRTH WEIGHT :-**

Out of 28 live births, 1 baby weighted between 1.5 to 2.0 kg. 6 weighted between 2 to 2.5 kg. 21 weighted more than 2.5 kg.

Thus 7 out of 28 (25%) babies had low birth weight. i.e. birth weight below 2.5 kg.

Weight in gram	No.	Percentage
1500gm to 2000gm	1	5 %
2000 gm to 2500 gm	6	21.42 %
>2500 gm	21	3.33 %

NICU ADMISSION:-

Out of 28 live babies, 8 babies required NICU admission.

Out of these 8 babies, 7 were admitted in NICU for low birth weight, and 1 was admitted for requirement of IPPR.

Weight in gram	No.	Percentage
1500gm to 2000gm	1	5 %
2000 gm to 2500 gm	6	21.42 %
>2500 gm	21	3.33 %

DURATION OF NICU ADMISSION:-As shown in the chart below, 6 babies required NICU admission for less than 5 days. 1 baby was kept in NICU for 5 to 10 days and 1 baby required NICU stay for more than 10 days.

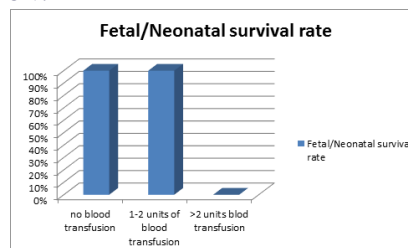
Weight in gram	No.	Percentage
1500gm to 2000gm	1	5 %
2000 gm to 2500 gm	6	21.42 %
>2500 gm	21	3.33 %

The minimum NICU stay required was 2 days and maximum stay required was 12 days.

NEONATAL COMPLICATIONS :-

Neonatal complications	No. of patients
Required ventilator support	0
Required surfactant therapy	0
Intrauterine growth restriction	2
Neonatal death	0

As shown in the chart none of the neonate required ventilator support, surfactant therapy, and no neonatal death occurred.

PERINATAL OUTCOME DEPENDING ON SEVERITY OF ABRUPTION :

P-value = 0.001 (Significant).

P-value by Chi-Square test, P-value < 0.05 is considered to be statistically significant.

The distribution of perinatal outcome differs significantly according to severity of abruption.

As shown in the chart, out of 23 patients who did not required blood transfusion, all had live birth.

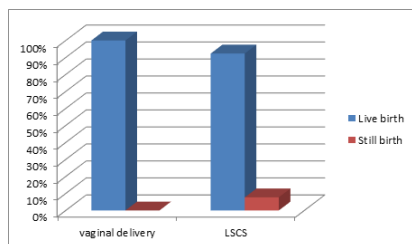
5 patients required 1 – 2 unit of blood transfusion. They had live births as well.

2 patients with severe abruption required more than 2 units of blood transfusion and both had stillbirth (100% perinatal mortality.)

PERINATAL OUTCOME AND MODE OF DELIVERY:- In our study 26 patients were delivered by emergency lower segment caesarean section and 4 patients were delivered vaginally.

Out of 26 patients delivered by LSCS 2 had stillbirth and 24 had livebirth.

All 4 patients delivered vaginally had live birth.



P-value = 0.566 (Non-Significant).

P-value by Chi-Square test, P-value < 0.05 is considered to be statistically significant.

The distribution and incidence of perinatal outcome did not differ significantly according to mode of delivery.

DISCUSSION:

Historically advanced maternal age & parity has been associated with increased risk of placental abruption. Ananth et al³ in a study found that abruption was slightly increased in women less than 25 years of age when compared with women aged 25-29 years. There was no increase in abruption with advancing maternal age. Our findings are similar of Ananth et al³ as out of the 30 cases, most belonged to age group 20 - 25 years (73.33%). 6 patients (20%) were between age group 26 – 30, while only 2 patients (6.66%) were above the age of 30 years. Considering parity our findings are different from historical studies as out of 30 cases, 13 patients (43.33%) were primigravida 14 patients (46.66%) were second gravida only 2 patients were third gravida & 1 patient fourth gravida.

In the earlier parkland hospital study of 408 women with placental abruption so severe to cause fetal demise maternal hypertension was apparent in about 50% of women once the depleted intravascular compartment was adequately refilled (Pritchard & co-workers, 1991)⁴ however the severity of preeclampsia did not correlate with the incidence of abruption in 445 women. From the maternal-fetal Medicine network, Sibai co-workers (1998)⁵ reported that 1.5 percent of women with chronic hypertension suffered placental abruption. Ananth & associates (1999a)⁶ reported a threefold increase incidence of abruption with chronic hypertension & fourfold with severe preeclampsia. Our findings also agree with those of all the above reviews as 18 out of 30 (60%) patients were diagnosed to have pregnancy induced hypertension. In our study of 2 patients of placental abruption severe enough to cause fetal demise, out of which 1 patient had pregnancy induced hypertension. This finding is consistent with past studies.⁷

In a review by Hurd WW⁸ 78% of patients with abruptio placenta presented with vaginal bleeding, 66% presented with abdominal pain; 17% presented with hypertonic uterus, & 15% patients had fetal demise on admission. In our study 66.66% of cases presented with both abdominal vaginal bleeding and abdominal pain; 26.66% patient had hypertonic uterus; 6.66% patients had fetal demise. Thus clinical signs & symptoms of patients in our study are comparable with past study. 86% patients in our study were diagnosed clinically & ultrasonographic evidence of abruption was seen in only 13% of cases. This is consistent with previous study⁹ that ultrasonography is not a sensitive method of diagnosing abruptio placentae.

Hubbard & Jeffcoate (1966)¹⁰ reported a 20 % incidence of DIC & 1 maternal death in a study of 506 cases of abruptio placenta.

Paterson (1979)¹¹ in a study of 193 cases of abruptio placenta, reported that 64% of patients required blood or blood products transfusion; 1 patient (0.5%) had DIC & there was no maternal mortality.

Hurd et al (1983)⁸ reported that 37.3 % of cases required blood or blood products transfusion, 13.6 % of cases had DIC with no maternal mortality.

In our study 23.33% of patients required blood or blood products transfusion; 10 % patients had hypovolemic shock ; 10% patient had postpartum haemorrhage & DIC was seen in 6.66% of cases . 1 patient required MICU admission. There was no maternal mortality in our study.

Thus maternal consequences in our study are comparable with previous studies. The decreased incidence of DIC seen in our study is due to adequate transfusion of blood & blood products as soon as severe abruptio placenta is recognised.

Perinatal mortality in our study was 6.66%. (n=30). Perinatal mortality in other studies done in past is shown below.

Study	Perinatal mortality
Index study	6.66%
Page et al (1954) ¹²	44.8%
Paintin (1962) ¹³	51%
Hibbard & Hibbard (1963) ¹⁴	25.2%
Chamberlain et al (1978) ³	4.4%
Knab (1978) ¹¹	31.7%
Paterson (1979) ¹¹	35%
Hurd et al (1983) ⁸	30%

Peterson¹¹ in 1979 studied correlation of severity of abruption against fetal outcome in 193 cases. The fetal survival rate in the patients who did not required any blood transfusion was 91.3%. fetal survival rate in patients who required 1-2 units blood transfusion was 59%, and in patients who required more than 2 units blood transfusion fetal survival rate was only 34%. In our study, fetal survival was 100% in patients who does not required any transfusion, was 100% in patients who required 1-2 units of blood transfusion & was 0% in patients who required more than 2 units blood transfusion.

Thus there is definite correlation between fetal outcome & severity of abruptio placenta. This fact was also confirmed by Ananth et al⁶. In their study the risk of stillbirth was dramatically increased for severe abruptio placenta. Hurd et al⁸ in study of 59 patients of abruption placenta found that the relationship between the degree of placental separation & fetal outcome was highly significant (p<0.003)

Name of study	Perinatal mortality in vaginal delivery	Perinatal mortality in LSCS
Index study	0%	100%
Paterson (1979) ¹¹	54%	3.77%
Knab (1979) ¹	44%	26%
Blair RG (1973) ¹⁵	38%	20%
Lunan CB (1973) ¹⁶	24.4%	8.2%
Golditch & Boyce (1973) ¹⁰	32.7%	8%
Hurd et al (1983) ⁸	20%	15%

In our study no perinatal mortality was found in patients delivered vaginally. Whereas patients delivered by LSCS had 100% perinatal mortality. Several studies in past have shown high perinatal mortality when patients of abruption placenta were delivered vaginally as compare to abdominal delivery.

In our study caesarean rate was 86.66%. The 100% perinatal mortality in patients delivered by LSCS seen in our study is due to the fact that both patients had fetal demise before hospital admission & were delivered by caesarean section for maternal compromise. The diagnosis-delivery interval in all LSCS patients was less than 2 hours.

CONCLUSION

- In our study we noticed that abruptio placentae is no more a complication that complicates elderly & multiparous patients but is found with equal severity in young primiparous patients making it necessary to consider this entity more seriously.

- 6 patients delivered between 28-32 weeks out of which 4 were live births & 2 stillbirths. 16 patients delivered between 33 – 36 weeks and all had live births. 8 patients delivered above 37 weeks and all had live births. The distribution of perinatal outcome differs significantly according to gestational age. Perinatal outcome is better if pregnancy is prolonged till 33 weeks of gestation.
- 18 out of 30 (60%) patients in our study were diagnosed to have pregnancy induced hypertension. Regular ANC follow up & early detection of hypertensive disorder in pregnancy could play a significant role in prevention of placental abruption.
- 86.66% of patients in our study were diagnosed clinically & ultrasonographic evidence of abruption was seen in only 13.33% of cases.
- Ultrasonography is not a sensitive method of diagnosing abruptio placentae.
- Thus clinical signs & symptoms of patients are main stay in diagnosis of placental abruption.
- The decreased incidence of DIC seen in our study is due to adequate transfusion of blood & any necessary clotting factors as soon as severe abruption placenta is recognised. Good maternal & perinatal outcome observed in our study is due to easy availability of blood & blood products & availability of Intensive Care facility at our institute.
- The observed perinatal mortality was strongly associated with severity of abruption.
- Good maternal as well as perinatal outcome seen in our studies as compared to those reported in previous studies is due to availability of blood bank, expert anesthesiological intervention & an intensive care backup. The improved neonatal survival was seen due to availability of neonatal intensive care facility.

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