

Original article:

CLINICAL STUDY OF MATERNAL AND FOETAL OUTCOME IN ABRUPTIO PLACENTAE AT PRAVARA RURAL HOSPITAL, LONI

Dr. Nikita Bagdi* , Dr. Manali Sewalkar**

*Resident, Department of OBGYN, Rural Medical College, Loni

**Lecturer, Department of OBGYN, Rural Medical College, Loni

** Corresponding Author

ABSTRACT

Abruptio placentae, as the other name accidental hemorrhage suggests, is truly accidental with few warning signs. Much studies has been conducted regarding its aetiology and effectiveness of its management. Still it has been one of the common obstetric emergency producing significant maternal and foetal morbidity/ mortality, especially in developing countries. It has wide variation in incidence ranging from 1:60 to 1:250 (Ratnam S.S.) The etiology of placental abruption is not known in majority of the cases (James D. K. et al). Though it is a Clinical diagnosis the advent of transvaginal sonography has helped it to differentiate it from the other cause of APH, Placenta previa, with great precision, which has different mode of management. 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. There has been increase in the use of cesarean section over recent years in abruptio placenta which has produced good results with regards to mother and fetus. The present study is done to know the impact of this disorder and effect of various parameters on the outcome.

INTRODUCTION:

Abruptio placentae, as the other name accidental hemorrhage suggests, is truly accidental with few warning signs. Much studies has been conducted regarding its aetiology and effectiveness of its management. Still it has been one of the common obstetric emergency producing significant maternal and foetal morbidity/ mortality, especially in developing countries. It has wide variation in incidence ranging from 1:60 to 1:250 (Ratnam S.S.) The etiology of placental abruption is not known in majority of the cases (James D. K. et al). Though it is a Clinical diagnosis the advent of transvaginal sonography has helped it to differentiate it from the other cause of APH, Placenta previa, with great precision, which has different mode of management. 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. There has been increase in the use of cesarean section over recent years in abruptio placenta which has produced good results with regards to mother and fetus. The present study is done to know the impact of this disorder and effect of various parameters on the outcome.

MATERIALS AND METHODS:

Study group consisted of Patients admitted to dept. of Obstetrics and gynaecology, Pravara Rural Hospital, Loni with clinical diagnosis of abruptio placentae and period of gestation more than 28 wks. As accidental haemorrhage can also be

diagnosed retrospectively, cases with retroplacental clots/depression (Grade-O accidental haemorrhage) 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 not clinical evidence of placental abruption.

Study was conducted among 100 consecutive cases with diagnosis of abruptio placentae either retrospectively. A detailed history of the patient was taken regarding name, age, socio economic states, address, occupation, duration of amenorrhea of loss of fetal movements, history of trauma, any history suggestive of PIH, previous medical disorders, outcome of previous pregnancies. A detailed obstetric history was taken.

Inclusion criteria:

1) All pregnant women with c/o. bleeding, P/V after 28 weeks of gestation and diagnosed as abruption during the course of delivery.

Exclusion criteria:

All pregnant women over 28 weeks of gestation who were admitted with c/o. bleeding p/v diagnosed as Placenta previa, Genital tract trauma, Lesions of genital tract.

CLINICAL EXAMINATION:

General Examination: This was made with reference to built nutritional status, presence of anemia, cyanosis, jaundice, edema lymphadenopathy. Signs of shock (restlessness, cold clammy skin), were noted temperature, pulse rate, blood pressure, respiration, and condition of tongue were noted.

Routine examination of cardio vascular system and respiratory system and central nervous system were done. Per abdomen with detailed obstetric examination was done and following parameters were noted down.

1. Height of uterus in cms and in weeks
2. Abdominal girth in cms.
3. Consistency of the uterus, whether tense or tender, with localised or generalised tenderness.
4. Lie presentation and position of the fetus, if possible and other parts of fetus.
5. Presenting part, whether mobile, fixed or engaged.
6. Fetal heart sounds - when present, the rate, intensity and regularity

When the diagnosis was doubtful and when emergency ultrasound was not available, per speculum examination and per vaginal examination were done in OT with proper emergency facilities being immediately available.

Any lesions of the vagina, cervix, amount of bleeding, condition of the Cervix with regard to effacement dilation, presenting part, cephalopelvic disproportion, status of the membranes and more importantly the differential diagnosis of placenta previa is made. Those with placenta previa, local lesions of the vagina and causes other than abruption were excluded from the study.

MANAGEMENT INCLUDES:

1) General management — correction of shock preferably with blood transfusion, monitoring of pulse, blood pressure, urine output, CVP.

1. Management of other complication—
 - a) DIC— managed by component therapy and by hastening delivery.

b) Renal Failure — by correcting hypovolemia with blood, colloids, crystalloids, by fluid challenge test, monitoring urine output, correction of electrolyte in balance and managing fluid balance depending upon the stage of renal failure.

2)Obstetric management.

- a) General principle was to hasten vaginal delivery and, LSCS was done when indicated.
- b) FHS if present was monitored.
- c) ARM done even when Bishop score was less than 6 and accelerated with 2.5 units oxytocin — when there is no contraindication for induction of labour; second stage of labour was cut short if necessary and prophylactic methergin was given and care was taken to prevent PPH.
- d) Emergency LSCS done when.
 - i. Labour is not established within 6-8 hrs of induction.
 - ii. General condition deteriorates inspite of blood transfusion.
 - iii. Fetus is mature, alive and is in distress.

RESULTS:

The total No. of deliveries, with more than 28 wks of gestation were 19,000. The total No. of Cases of Antepartum Hemorrhage were 170. Abruptio placentae being 100 (0.52%) cases, Placentae Previa 40(0.21%) and Unclassified being 30(0.15%). The incidence of APH was thereby 0.89%. There were no cases of coincidental placenta previa with Abruption.

The incidence of abruptio placentae in different age groups. when the age was analyzed based on subgroups displayed, the highest incidence was found among 21- 25 years accounting for 48%. Meanwhile the incidence below 20 years was 28%. The youngest age at which abruption was found in this series was 17 years and highest was 38 years.

This gives incidence according to weeks of gestation at which abruption occurred maximum incidence was found at the range of 33-36 weeks and was about 43%.

In the present series most of them delivered by combination of ARM and oxytocin (48 cases) ARM was done, even when Bishop score was <6.

LSCS was done in 16 cases among which ARM and syntocinon was used prior to caesarean in 6 cases. The indications were maternal.

2% had grade '0' and diagnosis was made retrospectively. Patient had no signs or symptoms and both babies were born live. RP clots were weighed. Grade I was present in 17%. Grade II was present in 49% which formed the latest group. fetal distress was present in all them and perinatal mortality was 100%. Grade III was present in 32% and was associated with complication.

This table shows that DIC and renal failure are the major complications of abruptio placentae.

Table 1 – Incidence Of Antepartum Hemorrhage

Study	Year	Total No of cases studied	Accidental hemorrhage	Placenta previa	Unclassified	Incidence of APH
1 B.N. Purandare NowrosjeeWadia maternity, Hospital, Mumbai	1956-62	80419	518 (0.63% cases)	400 cases (0.49%)	110 cases (0.13%)	1.27%
2. Krishna Menon, Madras Medical college, Madras	1957-59	24,634	450 cases (1.8%)	128 cases	104 (0.4%)	2.76%
3. EarnondeValera NationalMaternity, Hospital, Dublin	1956-66	51,401	1,394(2.7%)	635 (1.23%)	1.120(2.1%)	6.12%
4.G.S. Mondal Eden Hospital, Calcutta	1975-77	26,433	108(0.40%)	231 (0.87%)	196 (0.74%)	2.06%
5.Singhal Nanda Hospital	2008	7510	226(3.01%)	119 (52.64%)	40 (17.7%)	67 (29.65)%
6. Present study	2017-2019	19000	100 (0.52%)	40(0.21%)	30(0.15%)	0.89%

DISCUSSION:

In present study spanning from 2018-2019. The total No. of deliveries, with more than 28 wks of gestation were 19,000. The total No. of Cases of Antepartum Hemorrhage were 170. Abruptio placentae being 100 (0.52%) cases, Placentae Previa 40(0.21%) and Unclassified being 30(0.15%).The incidence of APH was thereby 0.89%. There were no cases of coincidental placenta previa with Abruptio. All authors shown in Table I except Monidal U.S. have found incidence of Abruptio placentae higher than placenta previa and the same was found in this series.

Probably this may be due to wide variety of etiological factors operating upon them and also their variation in incidence in different Socio-geographical conditions. Partly it may be due to different diagnostic criteria applied in diagnosis by different authors. The increased incidence in this series may be due to the institution, being Tertiary referred centre covering vast area, many high risk cases are referred from peripheral health centers.

The incidence quoted by James DK et al (1999) is about 2-5%. And this study falls within this limit and nears that of Krishna Menon (1961) who found an incidence of 2.76%. Eamon de Valera (1956-66) found are Incidence of 6.12% but the study incidence was way back in the years 1956-66. Mondal G.S. (1975 -77) found are incidence of 2.06% in Eden Hospital Calcutta after studying 26,433 cases. Singhal Nanda found (2008)¹⁹² an incidence of 29.65% which was very much higher than the present study.

Table 2-Incidence Of Abruptio Placentae At Various Hospital

Sl. No.	Study	Year	Total No. of Deliveries	No. of cases of Abruption	Incidence
1.	Palaniappan, Kilpauk Medical College, Hospital, Madras.	1978-81	23,391	193	1.1%
2.	B.N.Purandre Nowrosjee Wadia. Maternity, Hospital, Mumbal	1956-62	80,419	518	0.63%
3.	Krishna Menon, Madras Medical College, Madras.	1957-59	24,634	450	1.8%
4.	Lakshmi Ashar Nowrosjee Wadia Mat Hospital, Mumbai	1962-66	48,583	422	0.56%
5.	Douglas Haynes Louisville General Hospital, Kentucky	1955-64	27,713	201	0.78%
6.	Mondal U.S. Eden Hospital, Calcutta	1975-77	26,433	108	0.4%
7.	Ananth et al	2008	7,46,5858	-	0.59-1.22% (twin gestation and singleton)
8.	Ananth CV et al	2006	-	-	1.0%
9.	Nezli et al	2010	2610	81	3.75%
10.	Present study	2018-2019	19000	100	0.52%

When the age was analysed based on sub groups displayed in Table III the highest incidence was found among 21 to 25 yrs (36%). This was because they formed the largest set of women who delivered in our institute. This was comparable Mondal. G.S (1975-

77) who also found highest incidence in same age group, even Ananth and colleague (1996) and Nezli et al (2010)¹⁹³ 28%. However Mahendra Parikh and Masani (1959- 60) found highest incidence among those between 25 to 3 (37.36%) The incidence below 20 yrs. was 23% and that above 35 yrs. was 2%. The incidence of 2% above 35 yrs was because only few women above 35 yrs delivered compared to other age groups in the same period. The youngest age at which abruptio Placentae was found in this series was 17 yrs and highest was 38 yrs.

Table 3 - Parity Distribution

Sl. No.	Study	Year	Parity		
			I	II—V	VI and Above
1.	Parikh M N	1959-60	11.57%	48.84%	41.57%
2.	Lakshmi Ashar Now. Wad.Mat. Hospital, Mumbai.	1962-66	13.3%	58.3%	28.3%
3.	Ananth and colleague	1996	-	5 fold high on 3 or higher	-
4.	Singhal Nanda	2008	26.99%	63.1%	
5.	Nazli et al	2010	14%	43%	24%
6.	Present study	2018-2019	19%	67%	14%

Note: P1 refers prospectively i.e. primigravida at admission.

The incidence of abruption was highest among para 2 to para 5 because they formed the largest group among those who delivered in our institute. The incidence of abruption in para 6 and above was 14%, but only few women in this category delivered during the same period. The grand multiparity was one of risk factor for abruption. This was comparable to the incidence found by L. Ashar(1962-66) and Mahendra Parikh (1959 — 60) and also confirms that parity is one of the risk factor for abruption as put forward by Pritchard J.A. (1991), and Abbu — Hejja (1998) and Nazli et al (2010) and Singhal Nanda (2008).

Table 4 - Booked And Unbooked

	resent study	G.S. Mondal	Singhal Nanda
Booked	5%	40%	34.94%
Unbooked	95%	60%	65.04%

The study is of the opinion that accidental haemorrhage is truly accidental with few warning signs as found out in study conducted by G.S. Mondal (1975 — 77) which significantly had high number of booked cases (40%). However the incidence was 0.4% in the present study there were only 5% of booked cases, probably due to low socio- economic condition.

Table 5- Income Of Patients

Class	Low	Middle	High
Percentage %	90	8	2

High incidence of low income group was present in our study which according to many was one of the etiological factors (Paintin 1961). Hibbard B.M. and Hibbard D.B. 1963). But due to presence of high number low socio economic condition among all our inpatients the exact nature of influence could not be ascertained and also many of cases were wrongly

Table 6 - Weeks of Gestation At Abruptio

Sl. No.	Study	Year	28-32 Wks	33-36 wks	37 and above
1.	Krishna Menon Mad Med. college, Madras.	1957-59	16.44%	49.77%	33.77%
2.	Parikh M.N. Now. Wad. Mat. Hosp Mumbai.	1959-60	25.78%	13.68%	55.26%
3.	Singhal Nanda	2008	24.14%	18.53%	57%
3.	Present study	2011 Mar to Sep 2012	36%	43%	21%

Table 7 - Signs / Symptoms At Abruptio

Sl. No.	Symptoms / Signs	Lakshmi Ashar (1962-66)	Haynes D.M (1955-64)	Parikh M.N. (1959-60)	Ananth et al (2008)	Nazli et al (2010)	resent study
1.	Vaginal Bleeding	74.17%	87.56%	78.94%		45%	85%
2.	Pain Abdomen	54.26%	57.21%	N.A.			68%
3.	Tense Uterus	N.A.	26.86%	29.47%			45%
4.	Tender Uterus	N.A.	31.34%	13.15%			32%
5.	Inability to palpate fetal Parts	NA		13.68%			15%
6.	FHS absent	NA		53.15%			66%
7.	Loss of fetal movements	2.3%					35%
8.	Shocks	3.79%	17.9%				20%
9.	Hypertension				1.8-5.1 (RR)	16%	27%
10.	Anemia						80%
11.	Oedema						36%

Note: N.A. — Not Available

The symptom which was found in most of the patient was Vaginal bleeding, being present in 85%. The next commonest complaint was pain abdomen (68%). Those who had pain abdomen also had vaginal bleeding. But not vice-versa. Tender uterus was present in 32% almost all had fetal bradycardia when FHS was present. FHS was absent in 66% of the 105 fetus. Shock was present in 20% hypertension was present in 27% 80% had anemia- indicated by pallor. Oedema was present as a result of PIH or anemia in 36%.

In the present study no coincidental placenta previa was seen. Malpresentation were 12% and among them 9 were breech I was face (with anencephaly) and 2 were transverse lie. Most of them were preterm.

Cord prolapse was seen in one of the women with absent cord pulsation and IUD. Anomalies were also noted. A case of hydrocephalus (1 %) and also a case anencephaly was observed. That with hydrocephalus also had open spina bifida.

2% had grade '0' and diagnosis was made retrospectively. Patient had no signs or symptoms and both babies were born live. RP clots were weighed. Grade I was present in 17%. Grade II was present in 49% which formed the largest group. Fetal distress was present in all them and perinatal mortality was 100%. Grade III was present in 32% and was associated with complication.

Majority of the lie were longitudinal, among which cephalic were 94 (89.5%), Breech in 9 cases (8.5%). Shoulder presentation in 2 cases (1.9%). Among cephalic, 93 cases presented with vertex and one with face.

Among Breech 1 was associated with arrest of after-coming head due to hydrocephalus and was delivered by

craniotomy.

Among Shoulder presentation 1 LSCS was done and baby weight 2.5 kgs and was fresh still born and the other delivered by corpora conduplicata and baby weight 1.5 kgs.

The total abnormal presentation were 12 (11.4%) and most of the were due to prematurity.

In Ashar L. series it was found to be 7.1% (31 cases of 422 abruption).

In Singhal Nanda 2008 series it was found to be 12.91% (malpresentation) which correlates with our study.

Majority (81%) had intact membranes at admission and most of them in latent phase of labour.

9% had premature rupture of membranes and most had unripe cervix and acceleration was done with prostaglandins, especially PGE₂. 10% had early rupture of membranes and these were managed mainly with oxytocin.

2 cases were diagnosed retrospectively and had no signs or symptoms (Grade -0).

The maximum incidence was found among those who reported between 4-8 hrs, followed by 8-12 hrs. The interval was arbitrarily divided as 4 hours or less, 4-8 hrs. 8-12 hrs and more than 12 hrs.

12% reported after 12 hours of onset of symptoms and these were the ones who had maximum incidence of complication.

Coagulation defects were mainly detected by bedside tests, though the study might have missed sub clinical coagulation disorders, Laboratory methods were not feasible in this study. The incidence was 9.0%, all of whom showed abnormal results in bleeding time, clotting time and also in clot observation test which also showed evidence of fibrinolysis and 5 of them were corrected with whole blood transfusion. Abnormal clot retraction was seen in same patients. K.Menon reported an incidence of 24.8% who had coagulation failure. Incidence of severe coagulation failure was 4% and they also had other complications like ARF and shock and they could not be revived. The other cases were corrected with whole blood transfusion.

Maximum blood group was 'O' which corroborated with that seen in general population. The least was AB which was seen 8%. There are 2 cases of Rh-ve pregnancies was 0-ve and other was A-ve, both of whom received Anti D. based on K.B.Count.

In the present series most of them delivered by combination of ARM and oxytocin (48 cases) ARM was done, even when Bishop score was <6. Asha L Purandhare (1968) believed that higher concentration of oxytocin drip was required for stimulation of uterus in abruptio placentae. Parikh M.N (1961) also advised 5-10 units of oxytocin drip. However in this present study oxytocin was used in the dose of 2.5 units and there was good response. Noticeably, there was acceleration of labour, similar to that seen in active management of labour. Syntocinon alone was used in 21 of the cases. It was used in those cases who were in late part of active phase or in second stage of labour, and those with EROM. LSCS was done in 16 cases among which ARM and syntocinon was used prior to cesarean in 6 cases. The indications were maternal. In 10 cases LSCS was resorted without any trial, immediately after carefully admission among which 8 were done with a live fetus >34 wks of gestation and 2 were done for maternal indication where there was intractable vaginal bleeding and poor Bishop score on admission. In 18 cases, prostaglandins were used especially PGE₂, where there was poor Bishop score and patient had PROM. Patients were monitored carefully

for hyperstimulation and tachysystole.

The maximum incidence was found among those with 150-500 gms and was 51%. Lowest was found in those who had less than 150 gms (9%). Those with more than 500 gms were about 30% and fetal demise was a rule.

Table 8 - Incidence Of Complication

Sl.no.	Type of Complication	No of cases	Percentage
1.	Shock	20	20%
2.	Renal Failure	10	10%
3.	Coagulation failure identified by Bed side test	9	9%
4.	PPH	21	21%
5.	Couvellaire uterus	4	4%
6.	Evidence of Thrombocytopenia	9	9%

And PPH was seen all 3 cases of Couvellaire uterus and all of them were controlled by conventional oxytocics. And the rest were controlled with oxytocics and uterine massage.

5.Couvellaire uterus: The incidence of Couvellaire uterus in the study was 4%. The exact incidence could not be noted because it is a laparotomy finding. Among 16 caesarean section, the incidence was 4 out of 16 (25%). Among 4, 3 were associated with atonic PPH, which was controlled with oxytocics and massage. None of them required hysterectomy.

Table 9 – Uncorrected perinatal foetal mortality

Sl. No.	Series	Vaginal DEL				Cesarean section				Total fetal mortality %
		Alive	Dead	Total	%	Alive	Dead	Total	%	
1.	Haynes DM	94	74	168	44.2%	13	20	33	60.6	46.8%
2.	Present study	14(2T)	73(IT)	87	83.9%	9(2T)	9	18	50%	78.09%

Overall perinatal mortality in this study was 78.09% (82 out of 105 babies – 5 twins) The uncorrected perinatal mortality by vaginal route was 83.9% and that which cesarean section was 50% The main cause for high perinatal mortality was either fetus were dead on admission and / or were premature (79%).

CONCLUSION:

Although great studies have been made in diagnosis and management of abruptio placenta, its application is still lacking in developing country like India. In this study there was significantly high incidence of accidental haemorrhage and associated maternal and perinatal mortality. This was probably due to low socio economy conditions, lack of awareness of Health, Education, Poor transportation and appreciable short comings in health facilities.

Accidental hemorrhage is an obstetric emergency which, as name suggests, is truly accidental with few warning signs. The incidence although cannot be eliminated, care can be taken to decrease the overall incidence and severity of the condition. By avoiding high parity by timely sterilization, improving socio-economic status, proper antenatal care, anticipation of abruption in high risk cases, timely in patients admission, strict surveillance, prompt action at the time of occurrence can go a long way in bringing better results in dealing within this grave condition.

BIBLIOGRAPHY:

1. Cunningham et al , Williams, : Obstetrics 23rd edition McGrawhill; 761- 769 pp. year 2010.
2. Dee Lee J.B et al: A case of Fatal Haemorrhagic diathesis with premature detachment of placenta, Am J. Obstetric Gynecol 1901, 44: 785 pp.
3. Couvelaire : An Gynec, 1911; 8: 591 pp. An Gynec, 1912; 9 : 486 pp.
4. Dickeman et al: Am J.obstet — Gynecol. 1936; 31: 734 pp.
5. Gherman and Goodwin: Obstetric implication of activated Protein- C resistance and factor V leiden mutation. Ostet Gynecol surv. 2000, 55: 117 pp.
6. Weiner, Reid and Ruby: Am J. obstet gynecol, 1953; 66: 475 pp.
7. olomew (R.A.): Am. J. Obstet Gynecol 1949; 57 : 69 p.
8. Jeffcoate TJI.A.: J. Obstet and Gynecol India; 1956; 6:260.
9. Bonnar et al: Behavior of coagulation and fibrinolytic mechanism in Abruptio placentae, J. Obstet Gynecol Br. Common W. 1969; 76: 799.
10. Bhide. A.G. et al : Factors affecting perinatal outcome in APH. J. Obstet Gynecol India, 1990; 39: 517-521 pp.
11. Jeffcoate TJI.A.: J. Obstet and Gynecol India; 1956; 6:260.
12. Graf Von Ballestrom CL. et al: Premature separation of the placenta Clinical findings and foetal. Geburtshilfe Frauenhkiel 1994; 54 : 27-33.
13. OMU A.E. et al: Racial differences in aetiology of abruptio placental.J.Gynecol obstet. 1981, June; 19(3) : 205-10.
14. Critchon : Br. Med. J. 1950; 1:50 PP.
15. Eastman N.J. et al: William obstetrics edition 10th New York, 1950, Apple ton — century Crofts, Inc.P 586.
16. Macfee et al: Antepartum hemorrhage in Claye A (ed) British obstet practice, obstetrics, 3rd edition, London, Heineman.

17. Church M.W. et al — Cocaine lethality increases during late gestation in the rate in a study of Critical period of exposure. Am.J.Obstet Gyriecol 1997; 176: 901-6.
18. Pritchard J.A. and Brenkken A.L : Clinical and laboratory studies on severe abruptio placentae Am J.obstet gynecol 1967;97-68.
19. Pritchard J.A. et al: On reducing the frequency of severe abruptio placentae Am J.obstet gynecol, 1991; 165 :1345 pp.