

Original Research Article


# Maternal and perinatal outcome in abruptio placenta – Study at teaching hospital

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## Abstract

**Background:** Obstetric emergencies faced in India are much different from those faced by the western world. Out of them, Abruption leading to hemorrhagic shock is a major obstetric emergency, which requires adequate management to avoid catastrophic events including maternal death.

**Aim:** To assess the various modalities of treatment for abruption and its outcome, to assess maternal and perinatal outcome in patients with abruption, to determine the association and influence of various maternal factors on the outcome of pregnancy.

**Materials and methods:** The study was conducted at GMH, Nayapool which serves as a tertiary referral Center having approximately 18000-24000 deliveries per annum. The study was conducted during June, 2006 to July-2007. During this period there were 18950 deliveries. Out of this 296 cases were selected.

**Results:** Out of 18,000 deliveries, 1.64% (n-296) of the patients were complicated by abruption. The mean maternal age was 22-25 years with maximum incidence in both extremes of age. (20-25 years-64.80%, 31-35 years-28.37%). Multiparous women (83.10%) were more affected compared to primigravida (16.89%). A staggering 89.86% of women had no antenatal care and 91.21% of patients belonged to low socio-economic status. 41.21% of women were in 28-32wks of gestation and 35.81% were in 32- 36 weeks. Bleeding per vaginum was the presenting complaint in 89% of patients. 66.22% of patients came with IUD. Maternal complications were frequent. There were 6 maternal deaths, 4 due to hypovolemic shock, 1 due to DIC, 1 due to status Eclampticus. Duration of time between onset of bleeding and seeking medical advice was significant. 2 patients developed PPH. The average induction-delivery interval was 5.2hrs, 82.43% of patients had vaginal delivery and Cesarean

section was done in 17.56% of patients. 62.5% of patients received blood transfusion and 55.74% of patients were given FFP's

Maternal mortality rate was 2.36% Perinatal Mortality was 61%. Out of these 66.21% of the patients came with IUD, 7.43% had early neonatal deaths, 7.42% had stillbirths.

**Conclusion:** The possibility of abruptio placentae should be considered by the clinician when managing pregnant women with any of those characteristics. Abruptio placentae should be managed in centers where there is advanced maternal and neonatal facilities.

## Key words

Maternal, Perinatal, Abruptio placenta.

## Introduction

Obstetric emergencies faced in India are much different from those faced by the western world. Out of them, Abruptio leading to hemorrhagic shock is a major obstetric emergency, which requires adequate management to avoid catastrophic events including maternal death. Abruptio placenta is premature separation of a normally situated placenta. The incidence of abruptio in India is 0.5-1% and in our state it is 0.6-1% [1-3].

The various life threatening complications in the mother are hemorrhagic shock, acute renal failure, blood coagulation disorders including DIC and maternal death. Complications in fetus include prematurity, intrauterine death, stillbirth and asphyxia. The major contributing factors in our country are lack of antenatal care, low socio-economic status, anemia, etc. [4, 5]. This study has been done to assess the influence of various modalities of treatment on maternal and perinatal outcome.

## Materials and methods

The study was conducted at GMH, Nayapool which serves as a tertiary referral Center having approximately 18000-24000 deliveries per annum. The study was conducted during June, 2006 to July-2007. During this period there were 18950 deliveries. Out of this 296 cases were selected. The criteria for selection of patients for study-

- All patients who came with various degree of APH irrespective of gestational age were analyzed.

- Other causes of APH like placenta praevia, local cervical causes for bleeding were excluded.
- Associated risk factors were analyzed randomly.
- Complications occurring were taken into consideration.
- Regarding mode of delivery, caesarian section was done for obstetric indications, prostaglandins were used for cervical ripening in cases where the Bishop's score was low, syntocin was used for acceleration of labor in cases where Bishop's score was good i.e. where cervix was favorable.

Thus depending on mode of delivery patients were categorized broadly into two groups-

- Those who underwent Cesarean section - only ARM
- Those who had vaginal delivery - ARM + syntocin

Mode of Induction by ARM, ARM and Syntocin, Syntocinon, ARM and Miso Protsatol.

## Results

The total number of deliveries conducted at GMH during June 2006-2007 were 18000. 296 Patients complicated with abruptio were taken for the study.

Majority of the patients who came with abruptio were unbooked and received nil or minimal antenatal care. Out of these 230 women 77.7% were referrals from local Hospitals. It was found that 91.21% belonged to low socio – economic status and up to 80.6% were from rural areas

surrounding. Abruption is more common in the extremes of age. Abruption most commonly seen in multiparous women. The highest no. of cases was seen between 30-34 weeks of gestational age. Bleeding per vagina was the most predominant symptom which was present in 95.2% of patients (**Table – 1**).

**Table - 1:** Incidence of abruption.

Incidence	Cases	%
Abruption	296	1.64
<b>Booked/ Unbooked cases</b>		
Unbooked cases	266	89.86
Booked cases	30	10.14
<b>Socio economic status</b>		
Low Socioeconomic Status	270	91.21
Others	26	8.8
<b>Maternal Age (Years)</b>		
20-25	192	64.86
31-35	84	28.37
Others	20	6.77
<b>Parity</b>		
Primi	50	16.89
Multiparous	246	83.10
<b>Gestational Age</b>		
20-28 weeks	28	9.45
28-32 Weeks	122	41.21
32-36 weeks	106	35.81
>36 Weeks	40	13.51
<b>Symptom</b>		
Bleeding PV	100	33.78
Bleeding PV + Uterine Contractions	100	33.78
Only Uterine Contractions	4	1.35
Only decreased fetus movements	10	3.38
All Three	82	27.70
<b>General condition</b>		
Stable	100	33.78
Only tachycardia	100	33.78
Various degrees of shock	96	33
Associated with pre-eclampsia	202	70.95
Anemia	120	40.54
Came with Live fetus	100	33.78

2/3<sup>rd</sup> of the patients had vaginal delivery. Caesarian section was done for indications like previous caesarian in cases with live viable fetus with unfavorable cervix.

Early ARM was done in all cases where it was possible, irrespective of Bishop Score. Misoprost was used for termination of pregnancy where cervix was unfavorable. Dose depended on gestational age.(25 micro gm was used in cases where gestational age was above 34 weeks, 50 micro gm used above 30 weeks, 100micro gm used in cases where the gestational age was between 28-30wks.Dose was repeated for 4-6hrs depending on response to the previous dose that is the state of the cervix and uterine contractions. Maximum of 3 doses was used).Prostaglandins were not used in cases of previous Cesarean section, grand multiparous women. Oxytocin was used for acceleration of labour (**Table – 2**).

**Table - 2:** Details of the Patients with Vaginal Delivery (N – 244).

Mode of delivery	Cases	%
Vaginal delivery	244	82.43
Cesarean section	52	17.56
<b>Method of Induction</b>		
ARM	20	8.2
ARM+ syntocinon	142	58.2
ARM+ PGEI	82	33.6
<b>Induction delivery interval (Hours)</b>		
<6 hrs	170	57.43
6-12 hrs	86	29.05
12-24 hrs	25	8.45
>24 hrs	11	3.72
>36 hrs	4	1.35
<b>Indications for LSCS (N – 52)</b>		
Prv 2 LSCS	8	15.38
Prv 1 LSCS and malpresentation	2	3.85
Failed induction	10	1.92
Direct primary LSCS for Live baby	32	61.53

6-13 score is considered favorable for vaginal delivery. Out of 170 patients who delivered

within 6hrs, 64% were on syntocin after ARM. Rest was put on PGE1 after ARM. In those who delivered between 6-12hrs, PGE1 was used in 62% of the patients. PGE1 was found to be more

effective in cases where cervix was unfavorable in these patients response was good with prostaglandins (**Table – 3**).

**Table - 3:** BISHOP score.

Factors	0	1	2	3
Cervical dilation	Closed	1-2	3-4	5+
Cervical length	>2	1 or 2	<1	Fully taken up
Cervical consistency	Firm	Medium	Soft	
Cervical Position	Posterior	Midline	Anterior	
Head station	-3	-2	-1, 0	+1, +2

Induction-delivery interval was prolonged in cases where the bishop score is poor. As the induction delivery increased complications to both mother and baby increased. A total of 52 cases underwent Cesarean section.

prematurity (32 out of 40).4 due to birth asphyxia and another 4 due to respiratory distress syndrome. Out of these 40 cases, prostaglandin was used in 18 cases and syntocin was used in 10 cases.

Direct primary LSCS was done in 32 patients. In these patients live viable fetus was present and cervix was found to be unfavorable with Bishop score below 6. In the rest LSCS was done for other obstetric indications like malpresentation, previous 2 LSCS etc. Nearly 60% of patients received either blood or FFP or both. This is depending on the duration of bleeding, though in some bleeding for even short duration resulted in maternal exsanguinations.

### Discussion

There is universal agreement regarding the serious risk posed by abruption to both mother and fetus. The maternal mortality figures ranges from 3-6.5% according to various studies. Madigan Army Medical Centre abruption was responsible for 6% of maternal deaths. Risk of perinatal mortality is reported as 119 per 1000 live births (Shad H. Deering) [6]. The incidence of abruption in this study is 1.64%. This correlates with studies done. According to US Birth Certificate data, it is around 1%. In Parkland hospital it is around 1 in 290 [7].

Patients developed PPH during Cesarean section. PPH was controlled effectively by B-Lynch for control of PPH and were effectively controlled. None of the patients underwent hysterectomy for control of bleeding. Out of the 6 maternal deaths, 4 patients came in a state of shock with pulse and BP being non recordable. 1 patient came with prolonged clotting time and one with status eclampticus. All deaths occurred within 2-4 hrs after admission.

Abruption in our study was found to be more common in age group of 20-25 years (64.86%), followed by 31-35 years (28.37%). Most of the patients with abruption were multiparous (83.10%). Similar occurrence was found in other studies like Pritchard and colleagues [8]. The highest incidence was found between 28-32 weeks of gestation (41.21%) followed by 32-36 weeks (35.85%).

Perinatal outcome depends on the degree of placental separation and the time taken to seek medical help and on the gestational age. Out of the 40 perinatal deaths for the patients who came with live fetus, the most important cause is

In our study, 91.21% belonged to low socio-economic status, especially to 3 class 4 and low

socioeconomic status goes hand in hand with poverty, illiteracy and lack of antenatal care. Unbooked status has been cited as an individual risk factor and this study also found unbooked status to be very high in abruptio (89.86%).

89.99% of patients presented with bleeding per vaginam. According to Shad H. Deering [6], vaginal bleeding was present in 80% of patients with abruptio. Some type of hypertension was associated in 70.95% of cases (202 cases). Parkland Hospital study found it to be present in 50% of cases. Case fatality rate in our study was 2.36%. In Gynaeco Fertile study it was 8.9%. There were 6 maternal deaths out of 296 cases. Out of these, 4 patients came in severe degree shock, deeply exsanguinated; 1 patient came in DIC and 1 patient came with status eclampticus. 2 cases developed PPH (0.68%) during caesarian section and were effectively managed by B-Lynch. None of the patients underwent hysterectomy (for uncontrolled bleeding), In Ayub teaching hospital [9], Cesarian hysterectomy was done in 1.9% of cases for PPH and PPH was found in 8.9% of cases.

Acute renal failure was not reported in any of the cases. Grunfeld Pertuiset [10] found acute renal failure in 3% of cases of abruptio and 13 blood transfusions were given in 62.5% of cases, with FFP's is given in 55.4% of the cases.

Case fatality rate was lower in our study compared to other studies as per **Table - 4**. Perinatal mortality (61%) in our study reflects the high perinatal mortality associated with abruptio. Out of 296 cases, 196 cases presented with IUD at the time of admission, 20 patients had still births and 20 had early neonatal deaths. Leading cause for the neonatal deaths is prematurity. Next being birth asphyxia (**Table - 5**).

Early initiation of resuscitation, tertiary neonatal care set up and liberal use of caesarian section goes a long way to improve perinatal outcome in our study. 244 cases (82.43%) had vaginal

delivery. LSCS was done in 52 cases (17.56%) as per **Table - 6**.

**Table - 4:** Case fatality rates in other studies.

Study	Case fatality rate
AYUB teaching hospital [9]	<0.01%
Gynecol Obsteric drill (2003) [11]	3.9%
Sixto E Sanchez, peru (2002-2004) [12]	4.2%
Our study	2.36%

**Table - 5:** PNMR in various studies.

Study	PNMR
AYUB Hospital (2003-2004) [9]	67.9%
Gynecol Obsteric fertile (2003) [11]	85.9%
Sixto E Sanchez, peru (2002-2004) [12]	33.7%
Our study	61%

**Table - 6:** Management of abruptio in other studies.

	LSCS	Vaginal delivery
Ayub study [9]	30.2%	69.8%
Gynecol [11]	35.6%	64.4%
Sixto E, Peru [12]	86.7%	13.3%
Our study	17.56%	82.43%

Average induction-delivery interval was <6 hours (57.43%). The induction delivery interval in Pritchard study [8] ranged from 3-31 hours and the induction delivery interval in a study of US Hangarga was 15.78 hours. In retrospective analysis of 89 cases of abruptio published in, March-misoprostol was used in 15 cases and syntocin was used in 10 cases. Out of those where misoprostol was used, 3 were IUD and 2 were neonatal deaths. In cases where syntocin was used, 2 had neonatal deaths.

## Conclusion

The frequency of abruptio placentae is alarmingly high with adverse maternal and fetal

outcome. Multiparity, un-booked status, rural residence and maternal anemia are important risk factors. Early intervention, expeditious delivery and strengthening of safe motherhood services particularly in rural areas, will help to prevent and reduce the gravity of the situation.

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