

## Study of clinical profile of abruptio placenta in tertiary care center: A retrospective observational study

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### **ABSTRACT:**

**Introduction:** Abruptio placenta refers to the partial or complete detachment of a normally placed placenta after foetal viability but before birth. Prevalence ranges between 0.5 % to 1 % of pregnancies. Some of the risk factors for abruptio placenta include smoking, blunt abdominal trauma, retroplacental leiomyoma, premature rupture of membranes, thrombophilic disorders, uterine anomalies, multiple pregnancies, teenage pregnancy, elderly gravida (above thirty-five), and having previous history of abruptio placenta, grades of abruptio placenta, the condition of the foetus and Bishop's score are used to determine the kind of delivery<sup>7</sup>. The aim of the expectant management is to help fetus get mature enough to survive. Purpose of our study is to determine the incidence rate, risk factor, and outcome for both the mother and the foetus in cases with abruptio placenta. **Materials and Methods:** 36 women (28 or more weeks of gestation) diagnosed as abruptio placentae based on routine clinical examination and ultrasound were enrolled. Demographic, menstrual, obstetric & antenatal risk factor, preterm fetal outcome, data of mother's age, parity, gestational age, booking status, antenatal risk factors & pregnancy outcome obtained retrospectively from patient files & computer records. **Observations and Results:** Mean age of women was  $26.63 \pm 4.87$  and maximum i.e., 16 (44 %) were between 25 to 29 years. Primi were 12 (33 %) & multi were 24 (67 %). Maximum women i.e., 16 (44 %) had gestational age between 28 to 33.6 weeks. 28 (78 %) pregnancies were booked. Majority i.e. 35 (97 %) underwent LSCS. Amongst antenatal risk factor, Hypertensive Disorders in Pregnancy were present in majority cases i.e., 15 (42 %), Anemia was found in 22 (61 %) cases. Statistically no risk factor was found to be a contributing factor for favorable or unfavorable outcome. PPH was found in 4 (11 %), DIC in 1 (3 %) and AKI in 2 (6 %). 9 (25 %) cases had ICU admission, 19 (53 %) required blood transfusion. NICU admissions were 17 (47 %). Preterm were 25 (69 %) & term were 11 (31 %). **Conclusion:** Regular antenatal checkup, early diagnosis, identification and prevention of risk factor and prompt treatment will help us in improving maternofetal outcome.

**Keywords:** Abruptio placenta, maternofetal outcome, Regular antenatal checkup

### **INTRODUCTION:**

Abruptio placenta refers to the partial or complete detachment of a normally placed placenta after foetal viability but before birth<sup>1</sup>. Prevalence ranges between 0.5 % to 1 % of pregnancies<sup>2,3</sup>. It is one of the most significant preterm bleeding causes and is associated with serious obstetrical complications that raise the risk of both foetal and maternal morbidity<sup>4</sup>. There may be two types of haemorrhage in abruptio placenta: Concealed and revealed. Because the amount of blood loss does not match the mother's heart rate or blood

pressure, the Concealed type is much more dangerous and is also associated with a higher rate of foetal morbidity than the revealed kind<sup>5</sup>. Some of the risk factors for abruptio placenta include smoking, cocaine use, blunt abdominal trauma, retroplacental leiomyoma, premature rupture of membranes, thrombophilic disorders, uterine anomalies, multiple pregnancies, being under twenty, advanced maternal age (above thirty-five), and having previously experienced abruptio placenta<sup>4</sup>. The degree of placental separation and amount of bleeding determines the clinical symptoms. Abdominal

pain and vaginal bleeding are the most common presentation scenarios. However, other symptoms that may be observed include uterine pain, premature labour, hemodynamic instability, foetal distress<sup>2,5</sup>. The diagnosis is primarily clinical, and while ultrasonography has a low sensitivity for diagnosing abruptio placenta, it can be helpful in the differential diagnosis of placenta previa<sup>3,6</sup>. Almost invariably, direct visualisation of retroplacental clots at the separation site serves as confirmation of the abruptio placenta diagnosis. The assessment and treatment of abruptio placenta should be determined by the clinical state of the patient, the degree of blood loss, the health and development of the foetus, the occurrence of labour or not, the existence of complications, and the degree of placental abruption. The majority of the time, the decision is made in favour of prompt delivery. The degree of abruptio placenta, the health of the foetus, Bishop's score, and the intensity of the haemorrhage are used to determine the kind of delivery<sup>7</sup>. The aim of the expectant management is to help fetus get mature enough to survive. Given this, the purpose of our study is to determine the incidence rate, risk factor, and outcome for both the mother and the foetus in cases with abruptio placenta.

### **AIMS & OBJECTIVES:**

**AIM:** Clinical profile of abruptio placenta in tertiary care centre

### **OBJECTIVES:**

1. To study the prevalence of abruptio placenta.
2. To evaluate risk factors for abruptio placenta.
3. To analyse maternal outcomes in patients with abruptio placenta.
4. To analyse fetal outcome in patients with abruptio placenta.

### **MATERIALS AND METHODS:**

**STUDY AREA:** Obstetrics and Gynecology department, MGM Medical College and Hospital, AURANGABAD

**STUDY POPULATION:** All patients of abruptio placenta.

**STUDY DESIGN:** Retrospective study

**STUDY PERIOD:** After approval from ethical committee-  
February 2022-February 2024

**SAMPLE SIZE:** n- Sample size-36

### **Inclusion Criteria:**

**INCLUSION CRITERIA:** All cases of abruptio placenta.

### **Exclusion Criteria:**

**EXCLUSION CRITERIA:** Other causes of APH.

### **METHODOLOGY:**

After approval from Ethical committee, data will be obtained from department of Obstetrics and Gynecology.

All patients of abruptio placenta in MGM hospital from February 2022 to february 2024 are studied from the official data registers of the hospital and from patient's hospital records. After identifying the data, detailed information regarding the diagnosis, date and time, indication, outcome (maternal and neonatal) are noted.

Data will be entered in Microsoft excel & analyzed using SPAA version 24 0th. Mean & SD will be calculated for quantitative variables [if any] & proportions will be calculated for categorical variables. Data will be presented in the form of visual impressions like bar diagrams, etc. Incidence, Relative risk will be calculated. P value of < 0.05 will be considered statically significant.

### **PROCEDURE:**

All the data taken within 24 h of delivery or later in case a mother experienced some complications were extracted from computer system & files. Details of mother's age, parity, gestational age, booking status, antenatal risk factors & pregnancy outcome were noted. All data was entered into the database & evaluated.

### **Operational definition:**

1. **Abruptio placentae definitive diagnosis:** direct visualization of retroplacental clots on the separated site during caeserean section or vaginal delivery<sup>8</sup>
2. **Chronic hypertension:** systolic blood pressure above 140 mmHg and diastolic pressure above 90 mmHg before the gestational age of 20 weeks or before the conception<sup>8</sup>.
3. **Preeclampsia:** systolic blood pressure above 140 mmHg and diastolic blood pressure above 90 mmHg after the gestational age of 20 weeks with proteinuria (>300 mg/24 h or +1 by urine dipstick) or hypertension with thrombocytopenia, visual deterioration, pulmonary edema, increased serum creatinine levels, and abnormal liver and kidney function tests without proteinuria<sup>8</sup>.
4. **Anemia:** hemoglobin (g/dL) value below 11<sup>9</sup>.
5. **Preterm labor:** labor between 24 and 37 gestational weeks whereas early preterm labor is accepted that occurring before 34 weeks of pregnancy<sup>9</sup>.

6. **PROM:** Rupture of membranes before the onset of labor was defined as early rupture of membranes; and the presence of regular contractions or cervical dilation before 37 weeks of pregnancy was termed as preterm labor<sup>9</sup>.

frequency with percentages N (%). Odds ratio was used to evaluate qualitative data and Statistical significance was assumed if P value less than 0.05.

**Observation and Result:**

Out of the total 5600 deliveries conducted between the study duration 36 cases were diagnosed to have abruptio placentae with an incidence of 0.64 %.

**Statistical Analysis:**

Statistical analysis was performed using SPSS software, version 20 and data are expressed as mean ± SD plus

**Table 1: Demographics & clinical history**

Variable	Number of cases N	Percentage %
<b>Age (Years)</b>		
1. 18 to 24	11	31 %
2. 25 to 29	16	44 %
3. 30 to 35	7	19 %
4. >35	2	6 %
(Mean ± SD)	26.63 ± 4.87	-
<b>Parity</b>		
1. Primigravida	12	33 %
2. Multigravida	24	67 %
<b>Gestational age (weeks)</b>		
1. 28 to 33.6	16	44 %
2. 34 to 36.6	9	25 %
3. >37	11	31 %
<b>Mode of delivery</b>		
1. LSCS	35	97 %
2. Vaginal	1	3 %
<b>Booking status</b>		
1. Booked	28	78 %
2. Unbooked	8	22 %
<b>Total</b>	<b>36</b>	<b>100 %</b>

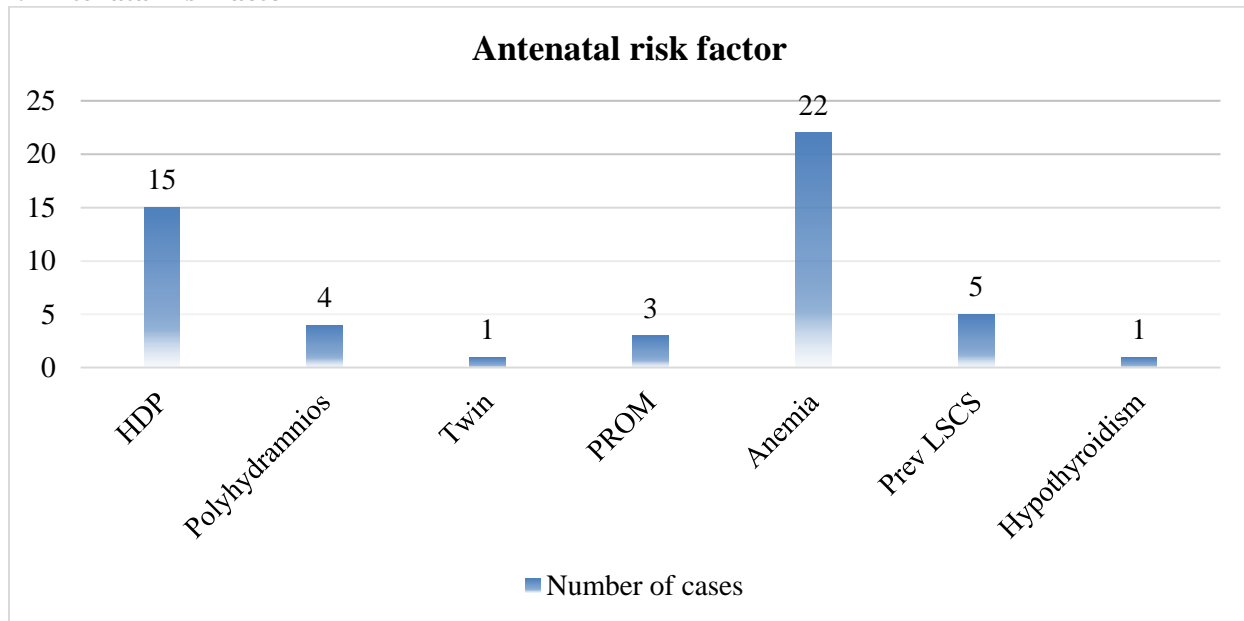
As shown in Table 1 mean age of all women was 26.63 ± 4.87 and maximum i.e., 16 (44 %) were from 25 to 29 years. Primi were 12 (33 %) & multi were 24 (67 %). Maximum women i.e., 16 (44 %) had gestational age between 28 to 33.6 weeks. 28 (78 %) pregnancies were booked. Majority i.e. 35 (97 %) had LSCS.

**Table 2: Antenatal risk factor**

Risk factor	Range of relative risk or odds ratio	Strength of association
<b>Hypertensive Disorders in Pregnancy</b>	0.06 - 1.19	0.08 (NS)
<b>Polyhydramnios</b>	0.23 to 97.49	0.30 (NS)
<b>Twin pregnancy</b>	0.0052 to 3.64	0.23 (NS)
<b>Premature rupture of membrane (PROM)</b>	0.16 to 75.33	0.41 (NS)
<b>Anemia</b>	0.10 to 2.23	0.34 (NS)
<b>Previous LSCS</b>	0.08 to 4.31	0.62 (NS)
<b>Hypothyroidism</b>	0.0052 to 3.64	0.23 (NS)

As shown in Table 2 amongst antenatal risk factor, Hypertensive Disorders in Pregnancy were present in majority cases i.e., 15 (42 %). Anemia was found in 22 (61 %) cases. Statistically no risk factor found to be contributing factor for favorable or unfavorable outcome.

**Graph 1: Antenatal risk factor**



**Table 3: maternal outcome**

maternal outcome	Number of cases N	Percentage %
Postpartum hemorrhage	4	11 %
ICU	9	25 %
disseminated intravascular coagulation	1	3 %
Acute Kidney Injury	2	6 %
blood transfusion	19	53 %
LSCS	35	97 %

As shown in **Table 3**, PPH was found in 4 (11 %), DIC in 1 (3 %) and AKI in 2 (6 %). 9 (25 %) cases had ICU admission, 19 (53 %) required blood transfusion.

**Table 4: fetal outcome**

fetal outcome	Number of cases N	Percentage %
NICU	17	47 %
With mother	8	22 %
still birth	2	6 %
IUD	9	25 %
Preterm	25	69 %
term	11	31 %

As shown in **Table 4**, NICU admissions were 17 (47 %). Preterm were 25 (69 %) & term were 11 (31 %).

**DISCUSSION:**

Abruptio placenta is one of the common causes of antepartum hemorrhage and is defined as premature separation of normally implanted placenta. It is more common in second half of pregnancy. Abruptio placenta is serious complication of pregnancy and causes high maternal and neonatal morbidity. Present study was conducted on 36 women with 28 or more weeks of gestation diagnosed of abruptio placentae based on routine clinical examination (clinical features such as vaginal bleeding, abdominal pain, abdominal tenderness,

hypertonic uterus and hard abdomen with the fundal height greater than the gestational age accompanied) and ultrasound. Details of mother’s age, parity, gestational age, booking status, antenatal risk factors & pregnancy outcome were recorded using a standardized questionnaire within 24 h of delivery or later in case a mother experienced some complications. All data were compiled & evaluated for result. In present study out of the total 5600 deliveries conducted between the study duration 36 cases were diagnosed to have abruptio placentae with an incidence of 0.64 %. In similar study

by **Aktürk E et (2022)**<sup>10</sup> they found there were 7126 deliveries and 112 cases amongst which were of abruptio placenta with a prevalence of 1.5%. **Shabnam Saquib et al (2020)**<sup>11</sup> in their study found that amongst total number of deliveries during the study period i.e., 15,079 abruptio placenta was observed in 92 cases (prevalence of 0.61%). In present study mean age of all women was  $26.63 \pm 4.87$  and maximum i.e., 16 (44 %) were from 25 to 29 years. Primi were 12 (33 %) & multi were 24 (67 %). Maximum women i.e., 16 (44 %) had gestational age between 28 to 33.6 weeks. 28 (78 %) pregnancies were booked. Majority i.e. 35 (97 %) had LSCS. In similar study by **Aktürk E et (2022)**<sup>10</sup> they found median value with minimum and maximum values of patients' ages was 31.5 (19-42) years. Four cases (4%) were nulliparous and 53 patients (51,9%) had parity of two or above. **Shabnam Saquib et al (2020)**<sup>11</sup> in their study found that mean maternal age of the women was  $32.0 \pm 4.8$  years. Eighty patients who had abruption were booked cases, who had more than 3 visits in the antenatal clinic. In present study amongst antenatal risk factor, Hypertensive Disorders in Pregnancy were present in majority cases i.e., 15 (42 %). Anemia was found in 22 (61 %) cases. In similar study by **Aktürk E et (2022)**<sup>10</sup> they found among all, of the subjects, 85 (83,3%) cases had anemia. **Shabnam Saquib et al (2020)**<sup>11</sup> in their study found associated antenatal risk factors as diabetes in 24 (26%), chronic hypertension in 2 (2.2%), pre-eclampsia in 18 (19.5%), multiple pregnancy in 9 (9.8%), and preterm premature rupture of membrane in 7 (7.6%). **Godwin S. Macheku et al (2015)**<sup>12</sup> in their study found risk factors of abruptio placentae as chronic hypertension (OR 4.1; 95 % CI 1.3–12.8), preeclampsia/eclampsia (OR 2.1; 95 % CI 1.1–4.1), prior caesarean section delivery (OR 1.3; 95 % CI 1.2–4.2), previous abruptio placentae (OR 2.3; 95 % CI 1.8–3.4). **Mishra R et al (2019)**<sup>13</sup> in their study found that patients who had severe preeclampsia had maximum rate of occurrence of abruption (75%) and most of them were associated with anemia and PIH. 10 % patients with eclampsia had abruptio placenta. In present study PPH was found in 4 (11 %), DIC in 1 (3 %) and AKI in 2 (6 %). 9 (25 %) cases had ICU admission, 19 (53 %) required blood transfusion. NICU admissions were 17 (47 %). Preterm were 25 (69 %) & term were 11 (31 %). In similar study by **Shabnam Saquib et al (2020)**<sup>11</sup> they found that 35 cases (40%) had fetal distress, 40 (47%) had a birth weight of less than 2.5 kg, 49 admitted to the neonatal intensive care unit due to prematurity and a hypoxic event. **Mishra R et al (2019)**<sup>13</sup> in their study found that maternal complications associated with abruption were Postpartum Haemorrhage (PPH) (30%), Disseminated Intravascular Coagulation (DIC) (25%), Acute renal failure (ARF) (13%), Shock (12%).

Increasing age has been implicated as a predisposing factor in Abruptio placenta, however in present study it was common in 25 to 29 years age. Most of the patients were booked and incidence of abruptio was found high in multiparous. Majority abruption was seen in preterm pregnancy. Majority of patients had associated anemia and PIH. Mode of delivery varied according to maternal and fetal factors.

### **CONCLUSION:**

To conclude present study reveals that Hypertensive Disorders in Pregnancy especially severe preeclampsia increases incidence of abruptio. Regular antenatal checkup, anemia correction, early diagnosis and identification of gestational hypertension would prevent the maternal and perinatal morbidity

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