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Original Article

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Study of Clinical Spectrum of Abruptio Placentae and its Management at a Tertiary Care Hospital

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ABSTRACT

Introduction: Placental abruption contributes almost 30% of all cases of antepartum haemorrhage. Both mother and foetus are at huge risk of maternal and perinatal morbidity and mortality. **Aims And Objectives**: To study the maternal and perinatal outcome incases of abruptio placentae at a tertiary care Hospital. Methods: This was a prospective observational study carried out in cases of abruptio placentae during a 2 year study period. **Results**: In present study, total 200 cases of abruption were observed. Most common age group in present study was 21-25 years. Abruptio placentae was common in gestational age above 37 weeks. In present study, 53% were vaginal deliveries, 45 % were delivered by LSCS, 2% by instrumental deliveries. Most common indication for LSCS was foetal distress(62.22%). In majority of (70%) of cases abruption was mixed type. (59.5%) cases had grade 2 abruption. Postpartum haemorrhage occurred in 30% cases and haemorrhagic shock was observed in 20% cases.89.5% cases required packed RBC transfusion. There were 4 cases of maternal mortality.65%babies required NICU admission, 30% were still births. 10% cases of perinatal mortality were there. **Conclusion**: Placental abruption is unpredictable and non-preventable, but maternal and perinatal morbidity and mortality can be reduced by adequate antenatal care, early detection and monitoring of risk factors, timely management at tertiary care level.

Key Words: *placental abruption, maternal and perinatal outcome, timely management at tertiary care level.*

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INTRODUCTION

Abruptio placentae is premature separation of normally located placenta totally or partially from uterine wall after 20 weeks of pregnancy[1,2].RCOG guidelines define abruption as placental separation from uterine wall after 24 weeks gestation[3]. Placental abruption accounts for about 33% of antepartum haemorrhage cases[4].

It is responsible for increased risk of maternal and perinatal morbidity and mortality. It complicates 0.5– 1% pregnancies in Western population[5-7], but the incidence is 4–5% in developing countries[8,9]. It is associated with hypertensive disorders, extreme of maternal age, multiparity, previous PA, scarred uterus, multiple pregnancy, diabetes mellitus, polyhydramnios, premature rupture of membranes, abdominal trauma, and cigarette smoking[10,11].

Careful management of hemodynamic status and the renal status of the patient is necessary for the good maternal outcome. The perinatalmortality is approximately20fold higher incomparison to pregnancies without abruption[12]. Abruption involving more than 50% of the placental surface is frequently associated with fetal death[13].

Management of abruption should be individualized on a case basis, depending on the severity and gestational age at which it occurs. With availability of emergency services, timely interventions, blood product supply, foetomaternal outcome of abruption is constantly improving[12].

Abruptio placentae isa very high risk pregnancy and such cases should be managed at a tertiary care hospital equipped with ICU facilities and 24 hour blood and blood component availability and skilled obstetricians.

Being a referral hospital, we receive many referrals from periphery which helps in improving maternal and perinatal outcome that's why this study is being conducted.

MATERIAL AND METHODS

Study design chosen, was prospective observational study. The study was conducted during October 2020 to October 2022.

In present study,200 cases were studied, after obtaining the permission from the institution ethics committee this study was conducted in the department of Obstetrics and gynecology from October 2020 To October 2022 after applying

the inclusion and exclusion criteria women willing to participate were selected for this study. Study group consists of patients admitted to department of Obstetrics and Gynaecology, at our tertiary care centre with clinical diagnosis of abruptio placentae and period of gestation more than 28 wks. A detailed history of the patient was taken regarding name, age, socio economic status, address, occupation, duration of amenorrhea of 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. Sher's classification of abruptio placentae was used to grade abruption.

INCLUSION AND EXCLUSION CRITERIA

Inclusion criteria:

Pregnant women willing to participate in the study with evidence of placental abruption, Cases > 28 weeks of gestation, All cases diagnosed as abruption before or after delivery.

Exclusion criteria were:

Those cases diagnosed as placentaprevia or any cause of Antepartum hemorrhage other than abruption Indeterminate causes of bleeding, Those cases delivered outside.

MANAGEMENT:

General management includes that correction of shock was done by blood transfusion and monitoring of vitals including urine output and central venous pressure was made. Management of other complications such as disseminated intravascular coagulation (DIC) is done by whole blood transfusion and by hastening delivery. Renal failure was treated by correcting hypovolemia with blood colloids, crystalloids, by fluid challenge test, monitoring urine output, correction of electrolyte imbalance, and managing fluid balance depending on the stage of renal failure with or without dialysis. Obstetric management includes vaginal delivery and caesarean section (CS) was done when indicated. Fetal heart sounds (FHS) when present were well monitored. Artificial rupture of membranes was done even when Bishop's score was<6 and accelerated with oxytocin when there is no contraindication for induction of labor. Second stage of labor was cut short if necessary and prophylactic methyl ergometrine was given and care was taken to prevent postpartum haemorrhage (PPH). Emergency CS was done if induction failed, general condition deteriorates in spite of blood transfusion, and fetus is mature, alive, and is in distress.

RESULTS

In the present etr200 cases were included. During study period, around 19000 deliveries were conducted, at our hospital . Out of these,1%were abruptio placentae. As seen in table 1, most common age group in abruptio placentae was 21 to 25 years, followed by 26-30 years. As per table 2, abruption was more common in unbooked cases accounting for (56%) and booked cases(44%). As shown in table 3,Abruption was common in gravida 2 to 4 group (56%) and as a single group, in primigravidae (39%). Most common risk factor associated with abruptio placenta is preeclampsia, in 108cases (54%). The most common type of abruption was mixed type in 140 cases(70%). We observed that the predominant symptom with which the patients presented was vaginal bleeding 164(82%). Next common presentation was pain in abdomen in 112 cases (56%). In our study , we observed that pregnant women with abruptio placentae are at higher risk of developing complications like Postpartum haemorrhagein 60 cases (30%), hemorrhagic shock in 40 cases(20%), DIC 30(15%), AKI (4%). 89.5% required PRBC Transfusion. 90 patients (45%) underwent LSCS, 55% by vaginal route. 109(59.5%) cases were more than 37 weeks, followed by 61(30.%) between more than 33 to 37 weeks and 30 (15%) between 28 to 32 weeks. There were 60 still births at admission (30%) and 140 (70%)live births. 70(35%) required NICU admission and 20 (10%) perinatal deaths were seen. APGAR at 5 min was more than 7 in 91 (65%).

Table 1: Background characteristics of the study popupation:

Age –Group (years)	No. of Subjects (n=200)	Percentage
≤20	10	5.0
21-25	118	59.0
26-30	62	31.0
>30	10	5.0
Total	200	100%
BOOKING STATUS	**No. of subjects N=200**	**percentage**
Unbooked	112	56
Booked	88	44
Gravidity	**No. of Subjects**	**percentage**
Primigravida	78	39.0
G2 to G4	117	58.
G5 and above	5	2.5

Table 2: Distribution of subjects according to associated risk factors of abruption

Associated Risk factors	No. of Subjects [n=200]	%
Pre-Eclampsia	108	54.0
Eclampsia	02	1.0
Multiple Gestation	06	3.0
PROM	08	4.0
Polyhydramnios	08	4.0
Trauma	03	1.5
Previous Abruption	12	6.0
Unknown	53	26.5

Table 3: Distribution subjects according to type of abruption

Type of abruption	No of subjects	Percentage %
Revealed	30	15
Concealed	30	15
Mixed	140	70

Table 4: Presenting Complains in Subjects (n=200)

Presenting Complains	No. of Subjects (n=200)	%
Bleeding PV	164	82.0
pain in abdomen	112	56.0
Headache, nausea, vomiting, blurring of vision	20	10.0
Pedal edema	16	8.0

(One subject may be having more than one presenting complains)

Table 5: Maternal Complication (n=200)

Maternal Complication	(n=200)	%
PPH	60	30.0
SHOCK	40	20.0
DIC	30	15.0
HELLP	10	5.0
AKI	08	4.0
SEPSIS	06	3.0
MATERNAL DEATH	04	2.0
PRES	02	1.0

Table no 6: Perinatal outcome

Perinatal Outcome	No. of Subjects (n=200)	%
Live Birth	140	70.0
NICU Admission	70	35.0
Still Birth	60	30.0
Early Neonatal Death	20	10.0

APGAR Score	N=140	%
>7	91	65
<7	49	35

DISCUSSION

The present prospective observational study was conducted to study maternal and perinatal outcome in abruptio placentae at a tertiary care centre.

In present study, highest incidence i.e 90.0% was from age-group of 21-30 years. D.Swetha et al (85.3%)and Sanghamitra Mohapatra et al (70.0%)who also found highest incidence in same age group.

In present study maximum 56.0% cases was unbooked, while 44.0% were booked. Similarly G.S. Mondal et al reported the majority cases were unbooked (60%). Similarly in study by Kumari S. et.al. found that maximum cases were unbooked (74.3%) and minimum were unbooked (25.7%).

The incidence of abruption in this study was highest 58.5% among G2-G4 Gravida because they formed the largest group among those who delivered in our institute. The incidence of abruption in Gravida G1 accounts 39.0%. This study correlates with the results of Sayli Wankedkar et al (59.1%), M.Kaviyaet.al. (57.6%), AparnaWahane et al (58.5%).

In present study, the most common risk factor for abruption placenta identified was a pre-eclampsia, constituting 54.0%. Similar findings were observed by Sanghamitra Mohapatra et al reported of 51.4% cases were having preeclapmsia. Aparna Wahane et al observed 65.0% cases of abruption placenta were having preeclampsia

Around 70% cases in present study were of mixed type, whereas study conducted by Nandini Gopalkrishna had revealed type of cases in greatest number (70.76%)

Around 82% of cases presented with bleeding per vaginum which is comparable with study by Ravikumar et al (86.17%)

The major maternal morbidity associated with placental abruption in this study was PPH (30%), followed by Hemorrhagic shock(20%) followed by DIC (15.0%). Simillar findings were reported by Sanghamitra Mohapatra et al PPH (35.0%), &hemorrhagic Shock (15.0%). SonalPhadtareet.al. reported DIC (30.0%), and renal failure (2.0%).

In present study, 44.5% were had gestational age more than 37 weeks, followed by 30.5% had gestational aged between 32 to 37 weeks .Similarly study done by Bhatt AD et.al. (124) reported that maximum study participants (43.18%) GA was between >32-37 weeks.

In present study, 29.0% subject babies needs NICU admission, 30.0% subject babies were having still birth. 10%wre early neonatal deaths. In study by Sharma N. et al, 54.92% neonates required NICU monitoring, early neonatal death in 20.21%, 9.42% were Still Birth. Sanghamitra Mohapatra et al reported 27.87% required NICU admission and 6.99% of neonatal death.

In present study Out of 140 subject babies, 65.0% subject babies were having APGAR score 7-10 and 35% had less than 7 APGAR at 5 min. Similar findings were reported by Sonal Phadtare et. al. (2017). 29.0% of babies were having APGAR score less than 7 and 71.0% of babies were having APGAR Score between 7-10.

CONCLUSION

Abruptio placentae is a very high-risk pregnancy. Abruption was common in 21-25 years age group. Common risk factors for abruption were Preeclampsia, multiple gestation, polyhydramnios and abruption in previous pregnancy. Vaginal route is a preferred mode of delivery. Abruptio placenta is associated with maternal morbidities like PPH, Haemorrhagic shock, DIC, HELLP, AKI and foetal morbidity and mortality like still birth, low Birth weight, NICU admissions, early neonatal death. Interval between diagnosis to delivery should not be Prolonged. The maternal and perinatal outcome can be improved by providing proper antenatal care, early diagnosis, availability of blood and blood component transfusion, strict surveillance and prompt resuscitative measures.

Ethics Approval and Consent to Participate: Institutional ethics committee approval was was taken for the present study

List of Abbreviations: PA : Placental Abruption PPH: Post Parum Hemorrhage AKI: Acute Kidney Injury DIC : Disseminated Intravascular Coagulation ICU : Intensive Care Unit

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Conflict Of Interest: The authors declare that they have no conflict of interest

Authors Contribution:

Dr SRM Developed the study proposal, managed research implementation, data collection analysed data and wrote the manuscript. Dr. PEB Developed the study protocol, assisted with data analysis and reviewed the manuscript. Dr.SNG, Dr SSD assisted with development of study proposal, reviewed final manuscript. Dr M K assisted in data collection. All authors have read and approved the manuscript.

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