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A retrospective study of maternal and fetal outcome in abruptio placentae at a tertiary care hospital in Jharkhand

Dr. Rajluxmi Tubid
Associate Professor, Department of Obstetrics and Gynecology, Shaheed Nirmal Mahto Medical College, Dhanbad, Jharkhand
*Corresponding author

Abstract---Introduction: Placental abruption, defined as the premature separation of the placenta, complicates approximately 1% of births. In normal pregnancies, placental separation occurs immediately after birth, while in pregnancies complicated by abruption, the placenta begins to detach before birth. Placental abruption is due to the rupture of the uterine spiral artery.[1]Bleeding into decidua leads to separation of the placenta. Materials and methods: A retrospective study was conducted at the Department of obstetrics and Gynecology, Shaheed Nirmal Mahto Medical College, Dhanbad, Jharkhand from January 2021 to December 2021. Total number of deliveries from January 2021 to December 2021 were 5700. Total number of abruptio placenta cases from January 2021 to December 2021 were 100. From case sheets, details of the patient like age, parity and maternal high-risk factors were collected. Patients with other causes of APH like placenta previa and other extra placental causes were excluded. All study patients underwent a complete obstetrical examination and clinical workup including history, general physical examination and abdominal and pelvic examination. Detailed obstetric history was obtained and maternal high- risk factors like PIH, GDM, polyhydramnios was noted. Results: Maximum no. of cases (40%) of abruptio placenta were between 31 to 35 years. Increase maternal age is risk factor for abruptio placenta. Maximun number of cases was Gravida 2 (34%). Chances of abruptio plaenta increase with increase parity. Patients who had severe preeclampsia have maximum rate of occurrence of abruption (75%). Most of them were associated with anemia and PIH. 10 % patients with eclampsia had abruptio placenta. Even normotensive groups had abruption which was about 15%. 75% had live birth, 25% had still born baby. Conclusion: Abruptio placenta is life threatening complication of pregnancy and it is associated with poor maternal and fetal outcome if not managed appropriately. Hence early diagnosis and

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prompt resuscitative measures would prevent both perinatal and maternal mortality and morbidity.

Keywords---placental abruption, bleeding, maternal, fetal outcome.

Introduction

Placental abruption, defined as the premature separation of the placenta, complicates approximately 1% of births. In normal pregnancies, placental separation occurs immediately after birth, while in pregnancies complicated by abruption, the placenta begins to detach before birth. Placental abruption is due to the rupture of the uterine spiral artery.[1]Bleeding into decidua leads to separation of the placenta. Hematoma formation further separates the placenta from the uterine wall, causing compression of these structures and compromise of blood supply to the fetus.[2] Some of the bleeding of placental abruption usually insinuates itself between the membranes and uterus, and then escapes through the cervix, causing external hemorrhage. Less often, the blood does not escape externally but is retained between the detached placenta and the uterus, leading to concealed hemorrhage. Placental abruption may be total or partial.[3]This premature detachment commonly produces pain and vaginal bleeding, the clinical hallmarks of placental abruption, and occurs in about 0.6-1.0 percent of pregnancies.[4]Exact etiology of placental abruption remains unknown, but multiple predisposing risk factors have been identified. These include pregnancy induced hypertension (PIH), advanced maternal age and polyhydroamnios. Maternal risks associated with abruption include massive blood loss, disseminated intravascular coagulopathy, renal failure, and, less commonly, maternal death. Abruption is potentially disastrous to the fetus as well, with perinatal mortality as high as 60 percent.[5]

Maternal and fetal survival depends on early diagnosis and intervention. The history begins with a review of the prenatal course, especially placental location on prior sonograms and if there is a history of placental abruption in previous pregnancies. History of smoking and potential trauma especially in the abdominal area is important. Assessment of the patient can provide very important clue for diagnosing onset of abruptio placenta.[6] The physical examination includes palpation of the uterus for tenderness, consistency, and frequency and duration of uterine contractions. The vaginal area is inspected for the presence of bleeding. Digital examination of the cervix should be delayed until a sonogram is obtained for placental localization and to rule out a placenta previa. If bleeding is present, the quantity and characteristic of the blood, as well as the presence of clots is evaluated. However, the absence of vaginal bleeding does not eliminate the diagnosis of placental abruption.

Materials and Methods

Study design

A retrospective study.

Study Location

Department of obstetrics and Gynecology, Shaheed Nirmal Mahto Medical College, Dhanbad, Jharkhand.

Study Duration

January 2021 to December 2021.

Total number of deliveries from January 2021 to December 2021 were 5700. Total number of abruptio placenta cases from January 2021 to December 2021 were 100. From case sheets, details of the patient like age, parity and maternal high-risk factors were collected. Patients with other causes of APH like placenta previa and other extra placental causes were excluded. All study patients underwent a complete obstetrical examination and clinical workup including history, general physical examination and abdominal and pelvic examination. Detailed obstetric history was obtained and maternal high- risk factors like PIH, GDM, polyhydramnios was noted. As 95% patients were admitted as emergencies, placental abruption was suspected depending on clinical features like vaginal bleeding, uterine tenderness, hypertonic uterus and diagnosis was confirmed by retroplacental clots. After initial resuscitation, mode of delivery was decided depending upon state of mother and fetus. Relevant blood investigations were done. Ultrasound for fetal well-being was done. Diagnosis was confirmed by the presence of retroplacental clots which was used to estimate the amount of bleeding and severity of abruption. Patients were managed according to the fetal and maternal conditions. Accordingly, results were analysed. Maternal complications studied were PPH, DIC, ARF, shock, pulmonary edema and infections. Fetal outcome were studied in the form of perinatal mortality (still births and neonatal deaths), prematurity and admission to the neonatal care unit.

Results

Maximum no. of cases (40%) of abruptio placenta were between 31 to 35 years. Increase maternal age is risk factor for abruptio placenta. Maximun number of cases was Gravida 2 (34%). Chances of abruptio plaenta increase with increase parity. Patients who had severe preeclampsia have maximum rate of occurrence of abruption (75%). Most of them were associated with anemia and PIH. 10 % patients with eclampsia had abruptio placenta. Even normotensive groups had abruption which was about 15%. 75% had live birth, 25% had still born baby.

Table 1
Age distribution

Age group	N (%)
20-25 years	9(9%)
26-30 years	31(31%)
31-35 years	40(40%)
>36 years	20(20%)

Table 2
Association with Parity

Parity	N (%)
G1	16(16%)
G2	34(34%)
G3	30(30%)
G4, G5	20(20%)

Table 3
Association with PIH

Type	Percentage
Severe preeclampsia	75 (75%)
eclampsia	10 (10%)
Normal BP	15 (15%)

Table 4
Fetal Outcome

Birth	Percentage
Still Birth	25 (25%)
Live birth	75 (75%)

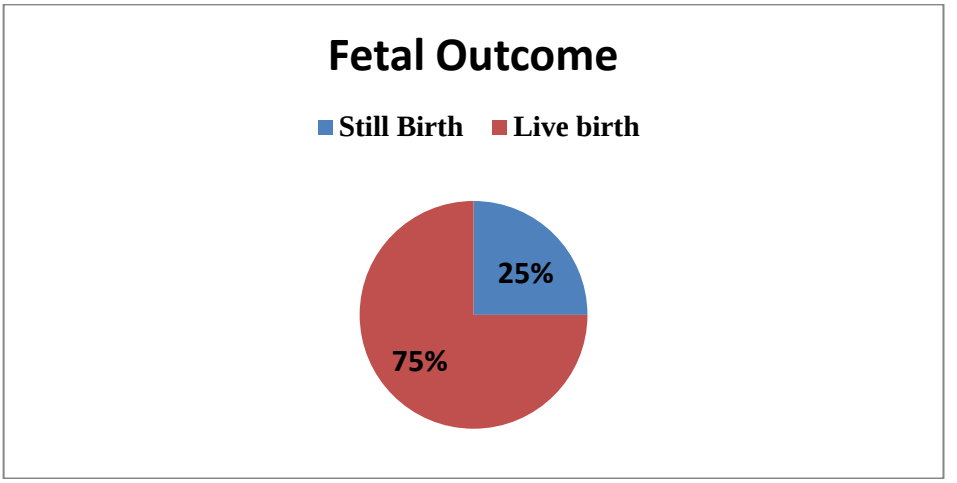

Figure 1. Fetal Outcome

Table 5
Maternal Complications

Complications	Percentage
PPH	30 (30%)
DIC	25 (25%)
ARF	13 (13%)
Shock	12 (12%)

Infection	10 (10%)
Others	10 (10%)

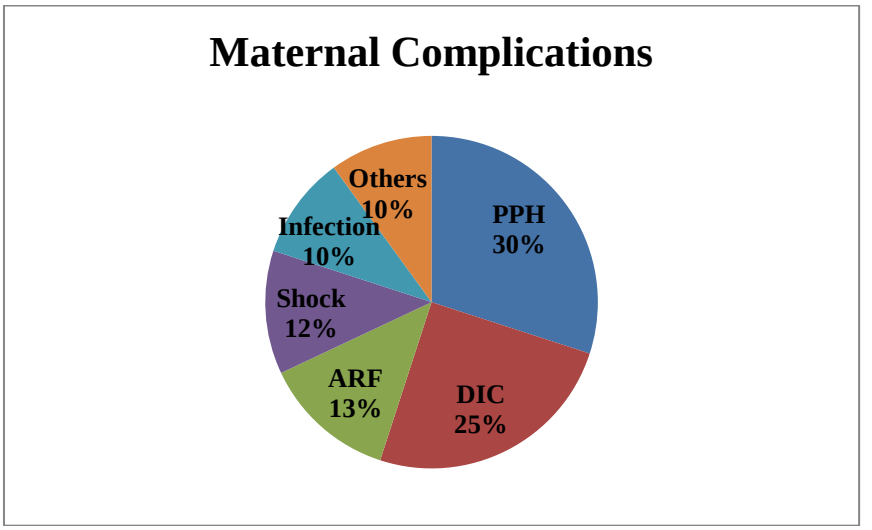

Figure 2. Maternal Complications

Maternal complications associated with abruption were postpartum haemorrhage (PPH) (30%), disseminated intravascular coagulation (DIC) (25%), acute renal failure (ARF) (13%), shock (12%). 10% patients had infections and 10% suffered from other complication.

Discussion

The incidence of abruptio placenta was 1.75% in our study, which is somewhat near to study by Wasnik SK. The signs and symptoms of abruptio placenta vary depending upon the severity of bleeding and the degree of separation of the placenta. Abruption can occur at any trimester in pregnancy but mostly it occurs at 32-36 weeks of pregnancy.[7] It was found that 75% of patients with severe preeclampsia, 10% of patients with eclampsia, 15% of patients with normal BP developed abruption in the study. Among the maternal complications, postpartum hemorrhage (PPH) was commonest followed by disseminated intravascular coagulation (DIC). PPH occurred in 30% of patients in the study, were as study by Talpur NN reported PPH in 28% of patients.[8]

DIC was associated with 25% of the patients in the study. Sher G observed DIC in 10-20% of his study patients with severe abruption and fetal demise which is comparable to the study. Renal failure is one of the major causes of maternal death.[9] It was found that ARF is reported in 13% of the cases and shock in 12% were as study from Shrivatsava V reported 24.6% shock cases. Infection was found to be in 17.5% of patients in the study by Choudhary V, in the study it is reported in 10% of the patients. Regarding fetal outcome, 75% were born alive and 25% were still births. A premature delivery can increase the fetal morbidity in cases of abruption.[10]

Conclusion

The study reveals that severe preeclampsia increases incidence of abruptio. Mainly abruption was seen in term pregnancy. Majority of patients had associated anemia and PIH, and the mode of delivery varied according to maternal and fetal factors. Major complication on maternal side was PPH and fetal complications included hypoxia, anemia, growth restriction, prematurity, neurodevelopmental problems, prematurity and fetal death. Thus this study suggests that severe pre-eclampsia, eclampsia, high parity is independent risk factors for abruptio placenta. Antenatal care which identifies the risk factors like PIH plays an important role in decreasing the incidence of abruptio placenta and improving the maternal and fetal outcome. Regular antenatal checkup, anemia correction, early diagnosis and identification of gestational hypertension would prevent the maternal and perinatal morbidity and mortality.

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