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Original Research Article

Maternal and fetal outcome in abruptio placentae at a tertiary care centre: a retrospective analysis

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ABSTRACT

Background: Placental abruption is a major obstetric complication leading to increased risk of maternal and neonatal morbidity and mortality globally. Placental abruption is traditionally defined as premature separation of a normally implanted placenta after 20 weeks of gestation and before delivery of the fetus. Early recognition of the risk factors, timely diagnosis and early intervention can significantly reduce maternal and fetal morbidity and mortality. This study was aimed to identify the associated risk factors with abruptio placenta and to analyse the maternal and perinatal outcome in abruptio placenta.
Methods: This was a retrospective observational study, from Jan 2016 to Dec 2019 at M.S. Ramaiah medical college and hospitals, Bangalore.
Results: In our study, the incidence of abruptio placenta was 0.95%. Majority of our patients were between 20-24 years (41.5%). Primigravidae accounted for 46.15% of the cases. The unbooked cases were 92%. The commonest risk factor was hypertension complicating pregnancy which accounted for 26% .The live births were 64%. Postpartum haemorrhage was one of the major complications in our study. There was no maternal mortality, probably due to early intervention and availability of blood and blood products.
Conclusions: Timely diagnosis and appropriate intervention preferably in tertiary care centre will significantly reduce mortality and morbidity in both mother and fetus.

Keywords: Abruptio placenta, postpartum haemorrhage, Disseminated intravascular coagulation

INTRODUCTION

Placental abruption is a major obstetric complication leading to increase in maternal and neonatal morbidity and mortality globally.[1] Placental abruption is a serious obstetric complication which is characterized by separation of a normally situated placenta after 20 weeks of gestation and prior to the birth of the fetus.[2] Maternal complications include haemorrhagic shock, disseminated intravascular coagulation, renal failure, ischemic necrosis of the distal organs and death.[3] Fetal complications include hypoxia , anemia, growth restriction, prematurity, neuro-developmental problems, and fetal death.[4-6]

The exact etiology of abruption is unknown but the risk factors such as high parity, advanced maternal age, low socioeconomic status, cigarette smoking, abdominal trauma, alcohol use, cocaine use, maternal hypertension, polyhydramnios, multiple pregnancy, thrombophilias and prior pregnancy with abruption have all been identified.[3] Abruption is characterized by acute onset, rapid progress and thereby causing high risk to both mother and fetus. Despite its clinical significance there are no reliable diagnostic tests or biomarkers to predict or prevent the occurrence of abruption. Maternal and fetal survival depends on early diagnosis and intervention. Placental abruption may be revealed when blood trickles between

the membranes and escapes thorough the vagina or concealed when blood collects behind the placenta with no evidence of vaginal bleeding. It may be of mixed type with both revealed and concealed haemorrhage.

Objectives

This study was aimed to evaluate the clinical profile of patients with abruptio placentae and to analyse the maternal and perinatal outcome in these cases.

METHODS

The study was conducted at department of obstetrics and gynaecology in M. S. Ramaiah medical college and hospitals, Bangalore from January 2016 to December 2019. It was a retrospective study. The data was collected from the labour room register, OT register and patient case notes from medical records department.

Inclusion criteria

All patients admitted with suspicion of abruption after 28 weeks of gestation were studied. Abruption was diagnosed clinically in those who presented with vaginal bleeding, tense and tender abdomen and confirmed following delivery by examination of the placenta or presence of retroplacental clots.

Exclusion criteria

All patients with gestational age less than 28 weeks , diagnosed with placenta previa and bleeding due to local genital tract lesions.

Procedure

The details regarding demographics, parity, gestational age, clinical presentation and maternal risk factors were collected. All patients underwent detailed clinical examination, obstetric examination and pelvic assessment. Necessary investigations were done and bedside ultrasound was done. Ultrasound, though a poor imaging modality to diagnose abruption, helped in assessing the amount of retroplacental clot. All patients were assessed for severity of abruption and managed depending on the maternal and fetal condition. The maternal complications including post partum haemorrhage, disseminated intravascular coagulation, number of blood and blood products received were analyzed. Fetal complications including still birth, Intra uterine fetal demise, neonatal death, prematurity, admission to Neonatal intensive care unit were analyzed.

Statistical analysis

All information entered and analyzed using Microsoft excel software. Descriptive statistics of risk factors were analyzed and summarized in terms of percentage

RESULTS

The total numbers of deliveries from January 2016 to December 2019 were 6773. Abruptio placenta was seen in 65 cases which accounted for 0.95%. In our study, 41.53% were in the 20-24 years age group. Primigravidae accounted for 46.15% of the cases. The unbooked patients accounted for 92.3%. Gestational hypertension and preeclampsia were found in 26.15%. Caesarean section was the mode of delivery in 49.23% and vaginal delivery in 50.71%. In our study the liver births was 64.17% . In our study revealed haemorrhage accounted for 70.76%. Postpartum haemorrhage was the most common complication associated with abruption 16.92%.

Table 1: Age distribution of patients with abruption.

Age (years)	N	%
<20	2	3
21-24	27	41.53
25-29	19	29.23
≥30	17	26.15

Table 2: Association of Parity index with abruption.

Parity	N	%
Primigravida	30	46.15
Gravida 2	16	24.61
Gravida 3 and above	19	29.23

Table 3: Number of patients based on booking status.

Bookings	N	%
Booked	5	7.69
Unbooked	60	92.30

Table 4: Risk factors related to abruption.

Risk factors	N	%
PIH and PE	17	26.15
Previous LSCS	9	13.84
PPROM	3	4.61
Multiple gestation	2	3.07
Gestational diabetes mellitus	1	1.5
Unexplained	33	50.76

PIH and PE (pregnancy induced hypertension and preeclampsia), PPROM (preterm prelabour rupture of membranes)

Table 5: Mode of delivery.

Mode of delivery	N	%
Vaginal delivery	28	43.07
Instrumental delivery	5	7.69
Lower segment caesarean section	32	49.23

Table 6: Fetal outcome in patients with abruption.

Fetal out come	N	%
Live	43	64.17
Still Birth	1	1.49
Intra uterine fetal death	23	34.32

Table 7: Distribution based on types of abruption.

Type	N	%
Concealed	7	10.76
Revealed	46	70.76
Mixed	12	18.46

Table 8: Complications associated with abruption.

Complications	N	%
Post partum haemorrhage	11	16.92
Rupture uterus with PPH	1	1.53
Disseminated intravascular coagulation	1	1.53
Renal failure	0	0

DISCUSSION

Placental abruption is a major cause of obstetric haemorrhage. Placental abruption is one of the serious complications of pregnancy, as it leads to both poor maternal and fetal outcome.[6] The incidence of abruption was 0.95% in our study. The incidence was 0.61% as reported by Saquib et al.[1] In our study, 71% were between 21-29 yrs compared to a study by Cande Ananth et al where 52% were between 25-40 years of age.[7] In our study, abruption was seen in 53.84% of multigravidae and 46.15% in primigravidae. In a study by Bhattacharya et al, primigravida accounted for 21.8%.[4] Choudhary et al reported that 58.87% were primigravidae.[2] The unbooked patients were 92.3% in our study, probably as our hospital is a tertiary care centre.In the study by Choudhary et al 66.94% were unbooked.[2] This is in sharp contrast to the study done by Shabnam Saquib et al where 87% were booked and the study was done in Dubai.[1] This reveals the lack of Antenatal care in our patients. In our study, the commonest risk factor was hypertension complicating pregnancy and was found in 26.15%. The study conducted by Saquib et al showed hypertension in 21.7%.[1] In the study by Patel et al 50% had hypertension.[9] In the study by Yang et al, PIH was seen in 39%.[3] In our study 49.23% underwent caesarean section and 50.76% were delivered vaginally. In the study by Choudhary et al 45.97% were cesarean deliveries.[2] In the study by Patel et al, 40% were cesarean and 60% were vaginal delivery.[9] Regarding the outcome of the fetus, there were 64.17% live births. These included 2 sets of twins and both underwent Caesarean delivery. In the study by Wasnik et al, 79% were live births and 69.8% were live births in the study by Sengodan et al.[5,6] The major complication in our study was postpartum haemorrhage. It was seen in 16.92%. There was one case of rupture uterus and one had disseminated intravascular coagulation. In the study by Saquib et al 33% had postpartum haemorrhage and 19.6% had postpartum haemorrhage in the study by Sengodan et al.[1,6] Our study showed that 49.2% of the patients received blood and blood products. Saquib et al reported that 20% of the patients needed blood transfusion.[1] Patel et al reported that 95% received transfusion.[9] In the study done by Wasnik et al 75% received transfusion. [5] None of our patients had renal failure. Choudhary et al reported 10.48% having acute renal failure.[2] There was no maternal mortality in our study. Patel et al reported 2.5% maternal mortality.[9]

Limitations

Limitations of current study were; this was a retrospective observational study and data was gathered from medical files. There is no comparison with a control group hence statistical significance cannot be drawn for the risk factors. Evaluation of the thrombophilia profiles was not done.

CONCLUSION

Placental abruption is one of the major complications. Various risk factors are known, but its occurrence is often unpredictable. Adequate antenatal care, early identification of risk factors can help to some extent. Treatment mainly depends on the gestational age and severity of abruption. Timely diagnosis and management preferably in a tertiary care centre, appropriate use of blood and blood products can significantly reduce maternal morbidity and mortality. Perinatal mortality and morbidity is usually due to intra uterine fetal demise and Preterm delivery. With good neonatal intensive care unit, the preterm babies survival is vastly improved.

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