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Original Research Article

Accidental haemorrhage in third trimester: maternal and fetal outcome

Niranjan N. Chavan*, Vibhusha Rohidas, Hanumant Waikule

Department of Obstetrics and Gynecology, LTMMC and GH, Mumbai, Maharashtra, India

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***Correspondence:**

Dr. Niranjan Chavan,

E-mail: nnchavan22@gmail.com

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ABSTRACT

Background: Abruptio placenta or accidental haemorrhage is one of the obstetrical emergencies and is truly accidental with few warning signs. Present study is planned to study the maternal and fetal outcome in patients of abruptio placenta in a tertiary care referral hospital in a rural set up which is helpful to plan management strategies and to decrease mortality and morbidity.

Methods: A prospective observational study was conducted at Department of Obstetrics and Gynaecology at tertiary care centre during September 2015 to August 2019. A total of 270 cases of abruptio placenta coming to the labor ward and delivered were included in the study. The information collected regarding maternal and fetal parameters were recorded in a master chart in Microsoft Excel 2010 and analyzed using the statistical package for the social sciences software (SPSS) version 20.0.

Results: In the present study there were a total of 29887 deliveries with 270 cases of abruptio placenta, incidence being 0.9%. Bleeding per vagina is the most common presentation (85.6%) followed by pain abdomen (70.7%). Common risk factors for accidental hemorrhage were: Pre-eclampsia (39.6%) and anaemia (32.2%). Rate of cesarean section was 40.7% (n-110) while rate of forceps delivery was 4.8% (n-13). Associated maternal complications include: post-partum hemorrhage (18.9%), DIC (10%), acute renal failure (4.1%) and puerperal sepsis (1.9%) while maternal mortality rate was 1.9%. Low birth weight (<2.5kg) was observed in 74.8% cases while still birth and neonatal mortality rate was 35.2% and 12.6% respectively.

Conclusions: Abruptio placenta or accidental hemorrhage is major risk factor for maternal and perinatal morbidity and mortality, thus efforts should be taken to reduce risk factor for abruptio placenta. Strengthening of antenatal care, anticipation and evaluation of associated high-risk factor and prompt management of complication can improve maternal and perinatal outcome in these cases. Abruptio placenta should be managed in centers where there is advanced maternal and neonatal health care facilities are available.

Keywords: Accidental Haemorrhage, Fetal outcome, Maternal Mortality, Maternal outcome, Pre-eclampsia

INTRODUCTION

Abruptio placenta or accidental haemorrhage is one of the obstetrical emergencies and is truly accidental with few warning signs. In developed countries the incidence is 1% of deliveries, whereas in developing countries it is around 2-8%.¹⁻³ In many countries the rate of placental abruption has been increasing, perhaps due to advancing

maternal age and increasing caesarean section rates.⁴⁻⁷ It is one of the significant causes of maternal and perinatal mortality and morbidity. The incidence of maternal mortality is around 1%, whereas perinatal mortality is much higher accounting for 66% of deliveries.⁴⁻⁸ The maternal effect of abruptio placenta depends primarily on its severity, whereas the fetal effects are determined by both severity and gestational age at which it occurs. The

etiology of abruptio placenta is obscure. However, there are many risk factors associated with the condition like hypertensive disorders of pregnancy, polyhydramnios, intrauterine growth restriction, advanced maternal age, maternal trauma, cigarette smoking, alcohol consumption, cocaine abuse, short umbilical cord, premature rupture of membranes, grand multiparity etc.⁹⁻¹²

The major maternal complications of abruptio placenta are hemorrhagic shock, disseminated intravascular coagulation, acute renal failure, postpartum haemorrhage and maternal death.^{11,13} The poor perinatal outcome is due to low birth weight, prematurity and still birth.^{14,15} With the better availability of blood and blood products and coagulation factors, the management of shock and DIC has decreased the maternal and perinatal morbidity and mortality over last few decades. There has been increase in the use of caesarean delivery over recent years in abruptio placentae which have resulted in a better obstetric outcome. Present study is planned to study the maternal and fetal outcome in patients of abruptio placenta in a tertiary care referral hospital in a rural set up which is helpful to plan management strategies and to decrease mortality and morbidity.

METHODS

A prospective observational study (September 2015 to August 2019) was conducted at Department of Obstetrics and Gynaecology at tertiary care centre. A total of 270 cases of abruptio placenta (after 28 weeks of gestation) coming to the labour ward and delivered were included in the study.

Exclusion criteria

- Cases coming before 28 weeks and having other causes of 3rd trimester bleeding.

Following maternal and fetal parameters in cases of accidental haemorrhage were evaluated: Risk factor for abruptio placenta, grade of abruptio placenta, mode of delivery, maternal complications (PPH, DIC, Acute renal failure, Puerperal sepsis, mortality), baby weight, APGAR score and perinatal outcome (still birth, live birth, neonatal death).

The information collected regarding all the selected cases was recorded in a Master Chart in Microsoft Excel 2010 and analysed using the statistical package for the social sciences software (SPSS) version 20.0.

RESULTS

In the present study there were a total of 29887 deliveries with 270 cases of abruptio placenta, incidence being 0.9%. Mean age of the study subjects was 28.32 years with 41.5% (n=112) were in the age group of 26-30 years. Out of total 270 cases, 32.2% females were primi-para

(n=87) while half of them (n=51.9%; n=140) presented at gestational age between 33-37 weeks. Common risk factors for accidental haemorrhage were: Pre-eclampsia (39.6%), anaemia (32.2%), Polyhydramnios (7%), multiple pregnancy and Trauma (1.5% each). No risk factor was identified in 18.1% cases (Table 1).

Table 1: Distribution of patients as per risk factors.

| Risk factors | N | % |
|--------------------|-----|-------|
| Pre-eclampsia | 107 | 39.6 |
| Anaemia | 87 | 32.2 |
| Polyhydramnios | 19 | 7.0 |
| Multiple pregnancy | 4 | 1.5 |
| Trauma | 4 | 1.5 |
| Unknown | 49 | 18.1 |
| Total | 270 | 100.0 |

Most of the women presented with grade 1 (36.3%) and grade 2 (34.1%) abruptio while grade 3 abruptio was seen in 27.8% cases (Figure 1).

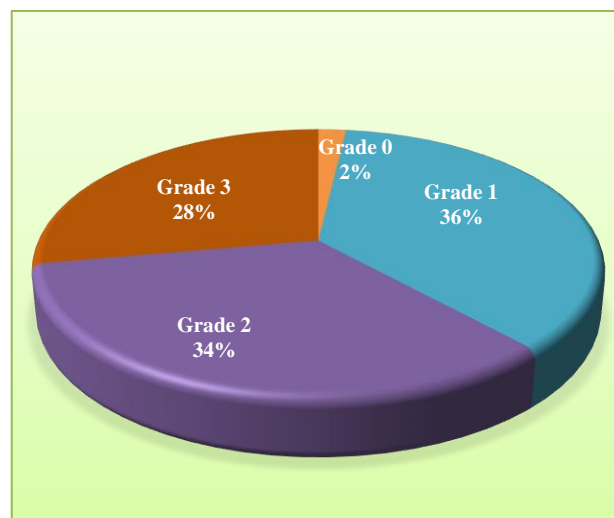


Figure 1: Distribution of cases as per grade of abruptio.

Bleeding per vagina is the most common presentation (85.6%) followed by pain abdomen (70.7%), absent fetal heart sounds (35.9%), fetal distress (32.6%), uterine contractions (23%) and hypotension (10%) (Table 2).

Table 2: Distribution of patients as per presenting features.

| Presenting Features | N | % |
|-------------------------------|-----|------|
| Bleeding PV | 231 | 85.6 |
| Pain in abdomen | 191 | 70.7 |
| Fetal distress | 88 | 32.6 |
| Abnormal uterine contractions | 62 | 23.0 |
| Absent FHS | 97 | 35.9 |
| Hypotension | 27 | 10.0 |

Rate of cesarean section was 40.7% (n-110) while rate of forceps delivery was 4.8% (n-13). Associated maternal complications include: post-partum haemorrhage (18.9%), DIC (10%), acute renal failure (4.1%) and puerperal sepsis (1.9%) while maternal mortality rate was 1.9% (Table 3).

Table 3: Distribution of patients as per maternal complications.

| Maternal complications | N | % |
|------------------------|----|------|
| PPH | 51 | 18.9 |
| DIC | 27 | 10.0 |
| ARF | 11 | 4.1 |
| Puerperal sepsis | 5 | 1.9 |
| Mortality | 5 | 1.9 |

Low birth weight (<2.5 Kg) was observed in 74.8% cases while still birth and neonatal mortality rate was 35.2% and 12.6% respectively (Table 4).

Table 4: Distribution of patients as per fetal complications.

| Fetal complications | N | % |
|---------------------|-----|------|
| LBW | 202 | 74.8 |
| Still Births | 95 | 35.2 |
| Neonatal Deaths | 34 | 12.6 |

DISCUSSION

In the present study there were a total of 29887 deliveries. Of these there were 270 cases of abruptio placenta, incidence being 0.9%. Similar incidence was found by Vijayasree et al. (2.5%), Singh AG et al. (1%), Jerry Coleman et al. (1.4%), T. Lakshmi et al. (0.3%), Sumangala Devi et al. (0.9%).¹⁵⁻¹⁹ Studies conducted by Iram Sarwar et al showed that most of the women with abruptio placenta presented with gestational age between 28-33 weeks. The study conducted by Singh AG et al., Vrunda Choudhary et al showed that more than 50% were between 33.1 to 37 weeks of gestation at the time of presentation.^{16,20,21} Present study showed similar higher incidence (51.9%) between 33 to 37 weeks of gestation at the time of presentation. Common risk factors for accidental hemorrhage in present study were Pre-eclampsia (39.6%), anaemia (32.2%), Polyhydramnios (7%), multiple pregnancy and Trauma (1.5% each). No risk factor was identified in 18.1% cases. Similarly, in studies conducted by Singh AG et al, Saira Dars et al. and Vrunda Choudhary et al. the incidence of pre-eclampsia as 56.86%, 59.13% and 45.15% respectively. In study conducted by Singh AG et al, Saira Dars et al. the incidence of anemia as risk factor was 31.37% and 38.26% respectively which is similar to the present study.^{16,21,22}

Most of the women presented with grade 1 (36.3%) and grade 2 (34.1%) abruption while grade 3 abruption was seen in 27.8% cases. In a study conducted by Sumangala

Devi et al., similar incidences were found showing Grade 1 as 37.5%, Grade 2 as 37.5% and Grade 3 as 28.5%. In study conducted by Jerry Coleman et al. incidence were found showing Grade 0 was 0% Grade 1 was 31%, Grade 2 was 11% and Grade 3 was 58%.^{17,19} Bleeding per vagina is the most common presentation (85.6%) followed by pain abdomen (70.7%), absent fetal heart sounds (35.9%), fetal distress (32.6%), uterine contractions (23%) and hypotension (10%). Bleeding per vaginam is most common presenting complaint in all studies, Vijayasree et al. (80%), Iram Sarwar et al. (96.2%), Jerry Coleman et al. (83%) and Soma Mukharji et al.^{15,17,20,23} (90.6%) which is similar to present study. Pain abdomen/Uterine tenderness as the next frequent presenting complaint was observed in Jerry Coleman et al. (79%) and Soma Mukharji et al. (71.9%) which is similar to present study.^{17,23} Rate of cesarean section was 40.7% (n-110) in present study. Similar results were found in studies conducted by Aesha Patel et al (43%), Vrunda Choudhary et al. (45.97%) and Saira Dars et al. (35.65%). The caesarean rates in other studies: Iram Sarwar et al. (30.2%), Singh AG et al (21.57%) and T. Lakshmi Suseela et al (30.9%) were also similar to present study. However, in study conducted by Jerry Coleman et al. (83%) and Sumangala Devi et al. (57.9%) the cesarean rates were high.^{16,17,19,20-24} Incidence of PPH was 18.9% in present study which is similar to study conducted by Iram Sarwar et al. (18.9%), Jerry coleman et al. (21%) Musarrat Jabeen et al. (14.56%), Vrunda Choudhary et al. (22.59%). Incidence of DIC, Acute renal failure, and puerperal sepsis in present study was 10%, 4.1% and 1.9% respectively.^{17,20,21,25} Incidence of DIC in present study (10%) was similar to Aesha Patel et al. (9%) and Jerry Coleman et al. (11%), DIC in study conducted by Musarrat Jabeen et al., Vrunda Choudhary et al., Soma Mukharji et al., Sumangala Devi et al, Singh AG et al and Saira Dars et al were 16.55%, 20.16%, 22%, 3.6%, 3.92%, 4.35% respectively.^{17,19,21,22,24,25} Acute renal failure in present study was 4% which was similar to studies conducted by Saira Dars et al. (4.35%), Soma Mukharji et al. (7.5%) and Aesha Patel et al. (7%). Incidence of Puerperal sepsis in present study was 1.9% which is similar to Sumangala Devi et al. (3.2%) and Soma Mukharji et al. (4.7%).^{19,22,23,24}

The Maternal mortality in present study was 1.9%. Similar results were noted in all other studies. Studies conducted by Singh AG et al, Saira Dars et al, Jerry Coleman et al, Musarrat Jabeen et al, Vrunda Choudhary et al, T. Lakshmi Suseela et al and Sumangala Devi et al found maternal mortality 1.96%, 2.61%, 2%, 1.32%, 0%, 0% and 0% respectively.^{16-19,21,22,25} Low birth weight (<2.5 Kg) was observed in 74.8% babies among present study. Seema bibi et al study showed that baby weight <2.5kg in 70% babies. Iram Sarwar et al study showed that baby weight <2.5 kg in 66.6% babies while Soma Mukharji et al observed baby weight <2.5 kg in 70.6% babies.^{20,23,26} In present study, perinatal mortality rate was 47.8%. Similar results were noted in studies by Sumangala Devi et al. (47%), Aeshapatel et al

(42.8%).^{19,24} However, few studies the perinatal mortality rate was high like in Iramsarwar et al (67.9%), Singh AG et al (68.62%) and Vrunda Choudhary et al (58.07%). Perinatal mortality in the present study was due to high rate of dead fetus at presentation, more number of premature babies and late presentation to hospital.^{16,20,21}

CONCLUSION

Abruptio placenta or accidental haemorrhage is major risk factor for maternal and perinatal morbidity and mortality, thus efforts should be taken to reduce risk factor for abruptio placenta. Strengthening of antenatal care, anticipation and evaluation of associated high-risk factor and prompt management of complication can improve maternal and perinatal outcome in these cases. Abruptio placenta should be managed in centers where there is advanced maternal and neonatal health care facilities are available.

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