**Original Article**

**Maternal and fetal morbidity with abruptio placentae**

Noureen Naz Talpur, Samina Rafique Memon, Bahawaluddin Jamro, Razia Korejo

Department of Obstetrics and Gynecology, Jinnah Postgraduate Medical Center, Karachi, Pakistan

**ABSTRACT**

**Objective**

To determine maternal and fetal morbidity with abruptio placentae and its outcome in these patients.

**Patients and Methods**

This cross-sectional study was conducted in the department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre (JPMC) Karachi, from February 2007 to January 2009. After ruling out other causes of antepartum hemorrhage, 50 patients of abruptio placentae after 20 weeks gestation admitted to labor ward were included in the study. Various maternal and fetal complications were noted.
Results

Only 10 (20%) patients were booked at JPMC for delivery and remaining 40 (80%) patients were non-booked and were admitted through emergency. Anemia was found in 22 (44%) patients, renal failure in 3 (6%) and disseminated intravascular coagulopathy in 5 (10%) patients. In 3 (6%) patients abruption had occurred in previous pregnancy. Hypertension was the most common associated risk factor found in 44% patients. Anemia, multiparity and advanced maternal age was also strongly associated with abruption. Placental abruption was more common in age group 31-40 years and grandmultipara (>P5). Forty (80%) patients had vaginal deliveries while in 10 (20%) patients caesarean section was performed; out of these one had caesarean hysterectomy due to life threatening PPH. Couvelaire uterus were found in 3 (6%) patients and PPH occurred in 14 (28%) patients. 70% patients received blood transfusion with quantity ranging between 1-5 pints, FFP ranging between 0-6 pints. No maternal death was seen. Out of 50 births, 18 (36%) babies were born alive, 25 (50%) babies were stillbirths and early neonatal death occurred in 7 (14%). Perinatal mortality was 64%.

Conclusion

Placental abruption can result in significant morbidity in both mother and fetus. (Rawal Med J 2011;36:297-300).

Keywords

Maternal morbidity, abruptio placentae, antepartum hemorrhage.
INTRODUCTION

Placental abruption is a serious obstetric condition that increases maternal and neonatal morbidity and mortality.\(^1\) It is the common cause of antepartum haemorrhage and is defined as premature separation of normally implanted placenta. The incidence of abruptio placentae varies between 0.49% to 1.8%.\(^2\) This most often takes place in the third trimester of pregnancy but it can happen any time after the 20\(^{th}\) weeks of gestation. The hemorrhage can be external or concealed. External hemorrhage occurs in 65-80% of cases and concealed in 20-35% of cases.\(^3\) Risk factors for placental abruption are advanced maternal age, high parity, low education, smoking, infertility pregestational diabetes, polyhydramnios, preterm premature rupture of membrane, preterm birth and small for gestational age birth.\(^4\) Factors that lead to abruptio placentae are trauma, multiple pregnancies, artificial rupture or spontaneous rupture of membranes, smoking or cocaine abuse, external cephalic version, placental abnormalities such as circumvallate placentae and history of placental abruption in previous pregnancy, inferior vena caval compression and lupus anticoagulants.\(^5\)

If blood loss is significant then hemorrhagic shock, disseminated intravascular coagulation, couvelaire uterus, postpartum hemorrhage and renal failure can develop.\(^6\) Neonatal complications include prematurity birth asphyxia, fetal growth retardation and stillbirth.\(^7\) Perinatal mortality closely relates to gestational age, higher incidence of congenital anomalies and IUGR.\(^8,9\) This study was conducted to
assess the magnitude of maternal and fetal morbidity with abruptio placentae in our population.

**PATIENTS AND METHODS**

This cross-sectional study was carried out in the department of Obstetrics and Gynaecology, JPMC, Karachi, from February 2007 to January 2009. Fifty patients with placental abruption after 20 weeks of gestation were included in the study. Diagnosis was based upon history, examination and ultrasonography demonstrating retroplacental clots and excluding placenta praevia. All the primigravidae and multigravidae with other causes of antepartum hemorrhage and bleeding disorders i.e. placenta praevia, vasa praevia and genital tract trauma were excluded from the study.

After explaining purpose, procedure, risk and benefits of study and informed consent, detailed history was obtained. Their age, parity, booking status, past obstetrical history, duration of gestation, amount of vaginal bleeding, and history of previous episodes of antepartum hemorrhage were noted. Clinical feature of shock, raised blood pressure, pallor or jaundice were noted. A general physical, abdominal examination and vaginal examination were performed. Bishop scoring was used to decide the mode of delivery. All patients had blood grouping Rh-factor, complete blood count, LFT’s, urine analysis and coagulation profile. Those suffering from severe hemorrhage were delivered immediately opting for either vaginal or abdominal route. A record was maintained for intrauterine and intrapartum death.
Follow up of babies in nursery were carried out. Maternal complications like shock, coagulopathy, renal involvement, and PPH were recorded.

Frequency and percentage was computed for categorical variables like age group, gestational age, booking status, parity, presenting complaints, risk factors, mode of delivery, maternal complication, fetal birth and death outcome and management. Mean and standard deviation were computed for quantitative variables like age, gestational age. SPSS-10 was used to analyze data.

RESULTS

The average age of the patients was 32.04±6.62 years (95% CI; 30.16 to 33.92). Majority of women had age between 21- 40 years (Fig 1).
The average gestational age of women was 34±3.87 weeks (95%CI; 32.9 to 35.1) (Fig 2). Twenty-six (52%) women were grandumltigravidae (parity > 5), followed by 14 (28%) multigravida (parity 2-5) and 10 (20%) were primigravida. Twenty percent pregnant women were booked and 80% were non-booked. Hypertensive disorder was major risk factor found in 44% patients (Table 1).
Bleeding per vaginum was the commonest presenting complaint, seen in 40 (80%) patients followed by labour pain in 30 (60%) patients. Abdominal pain and distension was observed in 30 (60%) patients, 22 (44%) were anemic, 20 (40%) presented with loss of fetal movement and shock was observed in 22 (44%) cases.
Table 1. Associated risk factors (n=50).

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertensive disorders</td>
<td>22</td>
<td>44%</td>
</tr>
<tr>
<td>PPROM</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td>Previous caesarean section</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td>Previous abruption</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>Trauma</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Polyhydramnios</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1</td>
<td>2%</td>
</tr>
</tbody>
</table>

Forty women (80%) delivered by vaginal route while caesarean section was performed in 10 (20%) cases. Out of 40 vaginal deliveries, 60% (30/50) were spontaneous vaginal delivery and 20% (10/50) patients induced with prostaglandin or misoprostol for vaginal deliveries.

Table 2. Maternal complications (n=50).

<table>
<thead>
<tr>
<th>Maternal complication</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemorrhagic shock</td>
<td>32</td>
<td>44%</td>
</tr>
<tr>
<td>PPH</td>
<td>14</td>
<td>28%</td>
</tr>
<tr>
<td>DIC</td>
<td>5</td>
<td>10%</td>
</tr>
<tr>
<td>Renal failure</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>Couvelaire uterus</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>Caesarean hysterectomy</td>
<td>1</td>
<td>2%</td>
</tr>
</tbody>
</table>
Most common maternal complications were shock and PPH (Table 2).

Table 3. Apgar score at one and five minutes (n=50).

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Score at one minute</th>
<th>Score at 5 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean + standard deviation</td>
<td>5.72 ± 0.83</td>
<td>7.39 ± 0.85</td>
</tr>
<tr>
<td>95% confidence interval</td>
<td>5.31 to 6.13</td>
<td>6.97 to 7.81</td>
</tr>
<tr>
<td>Median (IQR)</td>
<td>6 (1)</td>
<td>7 (1)</td>
</tr>
<tr>
<td>Minimum observations</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Maximum observation</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

Out of 50 births, 18 (36%) babies were born alive, 25 (50%) babies were stillbirths and early neonatal death occurred in 7 (14%); perinatal mortality was 64%.

Mean apgar score at one minute was 5.72 ± 0.83 ((5%CI; 5.31 to 6.13) (Table 3).

Forty (80%) patients managed conservatively. In 10 (20%) patients surgical intervention was required. Caesarean section was performed in 10 (20%) patients who had mild to moderate abruption and presented at an early stage with alive, term size foetus or in case where maternal condition was progressively deteriorating or having scarred uterus.

DISCUSSION

We had a higher frequency of unbooked patients as they were referrals and most of them had no antenatal checkups. Incidence of placental abruption increases with high parity, low socio-economic group and advanced maternal age. In this study,
average age was 32 years. Few studies have reported a positive association of abruptio placentae with advanced age,\textsuperscript{3,10} which is similar to this series, while other studies found no relation.\textsuperscript{11,12} The association of abruptio placentae with preterm birth has been studied by others as well\textsuperscript{1,5} and this study is comparable with other studies. Parity of patients is another risk factor noted in many studies.\textsuperscript{10,13} In this study, multiparity, particularly grand multiparity was noted as a predisposing factor for abruptio placentae. Similar figures of parity are reported by others.\textsuperscript{12}

The incidence of placental abruption is higher in pregnancy complicated by hypertensive disorders with increasing risk in some specific types of hypertension.\textsuperscript{3,5} In the present study, hypertension was the most common associated risk factor found in 22 (44\%) cases. In the study, 4 (8\%) cases of abruptio placentae presented with history of preterm premature rupture of membrane. Ananth CV et al reported that risk of abruptio was 358 fold higher among these women\textsuperscript{14} and this was confirmed by Khashoggi.\textsuperscript{15} There was history of prior abruption in 3 (6\%) patients of this study. Karegard and Gennser reported that a history of previous abruptio placentae increases the risk of recurrence in subsequent pregnancy 10 fold.\textsuperscript{16} Other risk factors such as previous caesarean section trauma, diabetes mellitus and polyhydramnios were also observed in this study.

Anemia was noted in 22 (44\%) patients of abruptio placentae in this study. The association of anemia to abruption was also reported in other studies.\textsuperscript{17,18} DIC was strongly associated with placental abruption and is a major contributor to poor maternal outcome. This was managed by transfusion of blood, fresh frozen plasma
and quick delivery. Sher G observed DIC in 10-20% of his study patients with severe abruption and dead fetus which is comparable to results of this study.\textsuperscript{19} Despite active resuscitation, other major complications such as renal failure developed in 3 (6%) and couvelaire uterus in 3 (6%). Renal failure is a major cause of maternal death in abruptio placenta and at autopsy, bilateral cortical necrosis has been found.\textsuperscript{20} Renal failure in this study was not severe and only conservative management resulted in complete recovery. In our study, slightly higher rate of renal failure than other developed countries. Pregnancy related renal failure is a disappearing clinical entity.\textsuperscript{21} Fortunately, there was no maternal mortality noted in this series. In other studies no maternal death were reported.\textsuperscript{1,22} The perinatal mortality was higher than other studies.\textsuperscript{2,4} The follow up of babies in late neonatal period was not possible, therefore, only early neonatal deaths were included in the study. The possible reason for high perinatal mortality is that most of the patients came very late and had intrauterine death at the time of admission and also due to lack of optimum neonatal facilities. This figure is very high when compared to developed countries. High rates of perinatal mortality, however, have been reported from some countries.\textsuperscript{23,24} **CONCLUSION** From the results of this study we reached at the conclusion that abruptio placentae can result in significant maternal and fetal morbidity.
REFERENCES


