

Clinical study of antepartum hemorrhage at a tertiary care hospital

Vishwanath Dange¹, P V Ramanbai^{2*}

¹Assistant Professor, ²Professor & HOD, Department of OBGY, Malla Reddy Institute of Medical Sciences, Hyderabad, Telangana, INDIA.
Email: drdangevi@gmail.com, dr.pvrama@gmail.com

Abstract

Background: Antepartum hemorrhage (APH) is defined as bleeding from or into the genital tract after 28 weeks of pregnancy and before delivery of the baby. In developing countries widespread pre-existing anemia, difficulties with transport, restricted medical facilities, decreased awareness on part of patient and relatives are largely responsible for high maternal/perinatal morbidity/mortality. The present study was conducted to assess maternal and fetal outcome in patients with antepartum hemorrhage. **Material and Methods:** Present study was hospital based, prospective, observational study, conducted in singleton pregnant women with bleeding from or into the genital tract after 28th week of pregnancy and before birth of baby irrespective of their parity and with a live or dead fetus. **Results:** During study period total 96 patients with APH were considered for study. Incidence of APH during study period was 1.31 %. Most common age group was 20-24 years (44.8 %), gravida 2 and more (76%), less than 34 weeks gestation (53.1 %). Most of patients of APH had abruptio placentae (56.3 %) followed by placenta Praevia (37.5 %) and undetermined (6.3 %). Patients radiologically diagnosed as placenta accreta spectrum had accreta (2.1 %), increta (1.0 %) and percreta (1.0 %). Most patients delivered vaginally (47.9%), while emergency caesarean section (40.6 %) and elective caesarean section (11.5 %) were other mode of delivery. Common complications observed in APH patients were anaemia (89.2 %), required transfusion of blood and blood products (65.6 %), postpartum hemorrhage (27.1%). Less common complications were HELPP syndrome (8.3 %), disseminated intravascular coagulation (7.3 %), acute kidney injury (7.3 %). Maternal mortality was noted in 3 patients (3.1 %). Neonatal Birth Weight was 1500 – 2500 grams in 56.3% neonates followed by 2500-4000 grams in 25 % neonates. 81.3 % babies delivered prematurely. In present study 36.5 % neonates required NICU admission. Total perinatal mortality was 36.5 % (19.8 % were stillbirth while 16.7 % were early neonatal deaths). **Conclusion:** Routine antenatal check-up, timely referral, timely decision for termination of pregnancy/ mode of delivery/ expectant line of management, adequate transfusion of blood and blood products, along with good neonatal intensive care unit can lower the perinatal and maternal morbidity and mortality.

Keywords: maternal outcome, perinatal outcome, antepartum hemorrhage, blood and blood products

*Address for Correspondence:

Dr P. V. Ramanbai, Professor & HOD, Department of OBGY, Malla Reddy Institute of Medical Sciences, Hyderabad, Telangana, INDIA.

Email: dr.pvrama@gmail.com

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INTRODUCTION

Antepartum hemorrhage (APH) is defined as bleeding from or into the genital tract after 28 weeks of pregnancy

and before delivery of the baby.¹ APH complicates about 2-5% of all the pregnancies with incidence of placenta previa (PP) about 0.33% to 0.55% and incidence of abruptio placenta (AP) about 0.5-1%.^{2,3} APH remains a predominantly unpredictable condition, prompt diagnosis, resuscitation and management are essential to save the mother and fetus. Important causes of antepartum hemorrhage are placenta previa, placental abruption, vasa previa, rupture of marginal sinus, local lesions in the vulva, vagina or cervix and unclassified. Maternal complications of antepartum hemorrhage are malpresentation, premature labour, higher rates of caesarean sections, postpartum hemorrhage, shock, retained placenta, peripartum hysterectomies, coagulation failure and death. Fetal

complications are premature delivery, low birth weight, intrauterine death, congenital malformations and birth asphyxia.^{4,5} In patients with antepartum hemorrhage, termination of pregnancy is required in many cases, even before term, this puts neonate at risk for complications related to prematurity such as respiratory distress syndrome, growth restriction, low birth weight, and increased risk of cerebral palsy and hypoxic-ischemic encephalopathy.⁶ In developing countries widespread pre-existing anemia, difficulties with transport, restricted medical facilities, decreased awareness on part of patient and relatives are largely responsible for high maternal/perinatal morbidity/mortality. The present study was conducted to assess maternal and fetal outcome in patients with antepartum hemorrhage.

MATERIAL AND METHODS

Present study was hospital based, prospective, observational study, conducted in Department of Obstetrics and Gynaecology, Malla Reddy Institute of Medical Sciences, Hyderabad,, India. Study duration was of 1 years (January 2020 to December 2020). Study was approved by institutional ethical committee.

Inclusion Criteria

- Singleton pregnant women with bleeding from or into the genital tract after 28th week of pregnancy

and before birth of baby irrespective of their parity and with a live or dead fetus.

Exclusion criteria

- Pregnant women with bleeding due to any another cause (bleeding disorder).
- Antenatal patients with bleeding prevaginal less than 28th week of gestation.
- Patients delivered outside

Written informed consent obtained prior to participation. In patients with antepartum hemorrhage, initial resuscitation was done with fluids, blood and blood products, mode of delivery was decided depending upon maternal and fetal risk factors. Patient information containing history (regarding age, obstetric details and maternal high-risk factors like PIH, GDM, polyhydramnios), complete obstetrical examination, laboratory reports, delivery details, mode of delivery, neonate details, etc. of patients included in study were recorded in pre-designed proforma. Maternal and fetal outcome were recorded such as maternal morbidity, including post-partum hemorrhage, caesarean hysterectomy, admission to IRCU and mortality. Neonatal evaluation included neonatal birth weight, Apgar score, admission to the SNCU and perinatal mortality. Neonatal follow up was taken till day 7. Data was collected in Microsoft excel and analysed. Statistical analysis was done using descriptive statistics.

RESULTS

During study period total 96 patients with APH were considered for study. Incidence of APH during study period was 1.31 %. Most common age group was 20-24 years (44.8 %), gravida 2 and more (76%), less than 34 weeks gestation (53.1 %). Most of patients of APH had abruptio placentae (56.3 %) followed by placenta Praevia (37.5 %) and undetermined (6.3 %). Patients radiologically diagnosed as placenta accreta spectrum had accreta (2.1 %), increta (1.0 %) and percreta (1.0 %).

Table 1: General characteristic

Characteristic	No. of patients	Percentage (%)
Age (years)		
< 20	11	11.5
20-24	43	44.8
25-29	25	26.0
30 - 34	10	10.4
≥ 35	7	7.3
Gravida		
1	23	24.0
2	34	35.4
≥ 3	39	40.6
Gestational age		
<34 weeks	51	53.1
34- 37 weeks	27	28.1
>37 weeks	18	18.8
Antepartum hemorrhage		
Abruptio placentae	54	56.3
Placenta Praevia	36	37.5

Undetermined	6	6.3
Placenta accreta spectrum		
Placenta accreta	2	2.1
Placenta increta	1	1.0
Placenta percreta	1	1.0

Most patients delivered vaginally (47.9 %), while emergency caesarean section (40.6 %) and elective caesarean section (11.5 %) were other mode of delivery. All placenta praevia patients underwent caesarean section.

Common complications observed in APH patients were anaemia (89.2 %), required transfusion of blood and blood products (65.6 %), postpartum hemorrhage (27.1 %). Less common complications were HELPP syndrome (8.3 %), disseminated intravascular coagulation (7.3 %), acute kidney injury (7.3 %). Maternal mortality was noted in 3 patients (3.1 %),

Table 2: Maternal outcome.

Outcome	Abruptio placentae (n=54)	Placenta Praevia (n=36)	Undetermined (n=6)	Total (n=96)
Mode of delivery				
Vaginal	43 (70.5 %)	2 (6.9 %)	1 (16.7 %)	46 (47.9 %)
Emergency C/S	18 (29.5 %)	16 (55.2 %)	5 (83.3 %)	39 (40.6 %)
Elective C/S	0	11 (37.9 %)	0	11 (11.5 %)
Complications				
Anaemia	49 (82.8 %)	24 (66.7 %)	4 (66.7 %)	77 (89.2 %)
Blood transfusion	39 (63.9 %)	21 (72.4 %)	3 (50 %)	63 (65.6 %)
PPH	16 (26.2 %)	9 (31 %)	1 (16.7 %)	26 (27.1 %)
HELPP	8 (13.1 %)	0	0	8 (8.3 %)
DIC	6 (9.8 %)	1 (3.4 %)	0	7 (7.3 %)
AKI	6 (9.8 %)	1 (3.4 %)	0	7 (7.3 %)
Maternal death	2 (3.3 %)	1 (3.4 %)	0	3 (3.1 %)

Apart from medical management for control of PPH, surgical and non-surgical methods for controlling PPH in APH patients were Uterine artery ligation (37.5 %), B- lynch suture (15.6 %), balloon tamponade (11.5 %), caesarean hysterectomy (11.5 %), internal iliac artery ligation (3.1 %) and peri partum hysterectomy (2.1 %).

Table 3: Various methods for controlling PPH

Mechanical methods	No. of patients	Percentage (%)
Uterine artery ligation	36	37.5
B- lynch	15	15.6
Balloon tamponade	11	11.5
Caesarean hysterectomy	11	11.5
Internal iliac artery ligation	3	3.1
Peri partum hysterectomy	2	2.1

Neonatal Birth Weight was 1500 – 2500 grams in 56.3% neonates followed by 2500-4000 grams in 25 % neonates. 81.3 % babies delivered prematurely. In present study 36.5 % neonates required NICU admission. Total perinatal mortality was 36.5 % (19.8 % were stillbirth while 16.7 % were early neonatal deaths).

Table 4: Fetal outcome

Fetal outcome	No. of patients	Percentage (%)
Neonatal Birth Weight (grams)		
<1500	17	17.7
1500 - 2500	54	56.3
2500-4000	24	25.0
>4000	1	1.0
No. of preterm babies	78	81.3
No. of live babies	81	84.4
No. of breech deliveries	8	8.3
No. of babies born with APGAR <7 at 5mins	22	22.9
No. of IUFD	19	19.8
No. of babies sent to SNCU	35	36.5
No. of early neonatal deaths	16	16.7
Perinatal mortality	35	36.5

DISCUSSION

Due to increased use of ultrasound, improved obstetrical and anaesthetic facilities, increased use of blood and its products to correct anaemia and advanced neonatal intensive care facilities played important role in decreasing perinatal as well as maternal morbidity and mortality in patients with antepartum hemorrhage. Causes of antepartum hemorrhage include placenta previa, placental abruption, vasa previa, rupture of marginal sinus, local lesions in the vulva, vagina or cervix and unclassified. Women with placenta previa are at an approximately 4-fold increased risk of second trimester vaginal bleeding and some women necessitate preterm cesarean section and hysterectomy for life-threatening hemorrhage.⁶ Placenta previa is one of the most serious complications during pregnancy and is associated with numerous adverse maternal and fetal-neonatal complications. Many of these are direct consequences of maternal antepartum and intrapartum hemorrhage.⁷ Importantly, the prevalence of placenta previa has been rising in parallel with the increasing rate of cesarean delivery and varies throughout the world and it has become a serious public health problem worldwide.⁸ The rising incidence of cesarean section combined with increasing maternal age, the number of cases of placenta previa and its complications, including placenta accreta spectrum (PAS). Placenta accreta is the abnormal adherence of the placenta with villus attachment to the myometrium. Risk factors for placenta accreta include placenta previa with or without previous uterine surgery, prior myomectomy, prior cesarean section, Asherman's syndrome, uterine fibroids and maternal age greater than 35 years.⁷ Godwin S *et al.*,⁹ noted that risk factors for abruptio placentae were chronic hypertension, preeclampsia/eclampsia, previous cesarean delivery, previous abruptio placentae, fewer antenatal care visits and high parity. Maternal complications associated with abruptio placentae were antepartum hemorrhage, postpartum hemorrhage, cesarean delivery, need for blood transfusions, altered liver function and maternal death. In addition, women with abruptio placentae had prolonged duration of hospital stay (more than 4 days) and were more likely to have been referred during labour. Adverse fetal outcomes associated with abruptio placentae include low birth weight, perinatal death and low Apgar score (below 7) at 1 and 5 min. In the present study it was observed that the incidence of APH was more common in multipara than in nullipara and the mean parity was 1.6±1.3. Similar results were noted in other Indian studies.^{10,11} In study by Nathwani ND *et al.*,¹² 67.27% cases of APH had preterm delivery, with 87.17% rate in placenta previa and 67.79% rate in placental abruption. Similar results were noted in present study. Kedar K. *et al.*,¹³ noted that out of 131, 51.91% was abruptio placentae

followed by placenta previa (45.80%) and 2.29% of unclassified hemorrhage. Maximum patients belonged to 25-29 years age group (40.46%), more than 36 weeks of gestational age. 52.94% had PIH as a causative factor of abruption while 41.67% had history of previous LSCS for placenta previa. Anaemia was most common complication in APH followed by PPH. One patient died of renal failure in abruptio placentae. Neonatal jaundice was the most common complication amongst the neonate followed by prematurity. In study by Mangal CY *et al.*,¹⁴ incidence of APH was 1.29%. Maximum number of cases were of placenta previa (76.8%) followed by abruptio placentae (20.5%) and unclassified hemorrhage (2.7%). The incidence of APH was highest 43.8% in the age group 25-29 years. Anemia was the most common complication (51.7%) in APH patients. Neonatal jaundice was the most common complication (26.8%) amongst the neonate of APH. In study by Nathwani ND *et al.*,¹² PPH was a major intrapartum complication in cases of APH (19.09%), placenta previa (25.64%) and placental abruption (18.64%). DIC was present in 10.25% cases of placenta previa and 16.94% cases of placental abruption, whereas acute renal failure (ARF) was present in 7.27% cases of APH. Similar findings were noted in present study. Yang *et al.*¹⁵ concluded that abruption is more likely to be related to conditions occurring during pregnancy (preeclampsia, abdominal trauma, intrauterine infections, premature rupture of membranes, polyhydramnios, smoking and substance abuse) and placenta previa is more likely to be related to conditions existing prior to pregnancy (uterine scar manual removal of placenta, curettage, advanced maternal age, multiparity and previous placenta previa). Conservative management is usually appropriate when APH occurs in the extremely preterm pregnancy (less than 28 weeks of gestation) and the maternal condition is stable. When the bleeding is considered life-threatening for the woman or there is evidence of cardiovascular compromise that fails to respond to resuscitation, consideration should be given to delivery of the fetus. Study by Gandhi SK *et al.*,¹⁶ noted that 20.2% perinatal deaths as outcome of APH and 14.2% still births. 23.8% babies had asphyxia, respiratory distress syndrome was in 7.1% babies, septicemia was seen in 13% and jaundice in 29.8%. Higher rates of NICU admission and stay were seen with these complications. Prematurity was observed in 82.8% babies. Similar findings were noted in present study. In patients with antepartum hemorrhage, the pregnancy often needs to be terminated in advance to save the lives of the mother and fetus, resulting in an iatrogenic preterm birth that could harm both the mother and the baby.

CONCLUSION

Adverse maternal and perinatal outcome was noted in patients with antepartum hemorrhage. Routine antenatal check-up, timely referral, timely decision for termination of pregnancy/ mode of delivery/ expectant line of management, adequate transfusion of blood and blood products, along with good neonatal intensive care unit can lower the perinatal and maternal morbidity and mortality.

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