"STUDY OF THIRD TRIMESTER BLEEDING IN ANTEPARTUM HEMORRHAGE COMPLICATING PREGNANCY AND ITS MATERNAL AND PERINATAL OUTCOME IN A TERTIARY CARE HOSPITAL"

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Abstract
Background: Antepartum hemorrhage (APH) is a major global cause of maternal mortality, with developing nations such as India being particularly affected. Early detection and prompt treatment can lower the related morbidity and death in both mothers and fetuses. APH is defined as bleeding from or into the genital tract, occurring from 24 + 0 weeks of pregnancy before the birth of the baby.
OBJECTIVES:
1. To study maternal outcome in Antepartum hemorrhage complicating pregnancy.
2. To study fetal outcome in Antepartum hemorrhage complicating pregnancy.
Material & Methods: Study Design: Non-randomized longitudinal prospective observational study. Study area: Department of Obstetrics and Gynaecology. Study Period: 1 year. Sample size: The study consisted of 100 cases. Sampling Technique: Simple random sampling method.
Results: In the present study, 81% of cases were live born, among them, 51% were placenta previa in which 18% were preterm,33% were term and 30% were abruptio placenta in which 6% were preterm and 24% were term. 2% of cases were stillborn, were term abruption placenta, Birth weight <2.5kg in 1 baby,>2.5kg in 1 baby, and uterine Deaths were 17%.
CONCLUSION: As an obstetric emergency, APH calls for prompt diagnosis and prompt treatment. The diagnosis of placenta accreta spectrum is increasing due to advancements in imaging modality, despite the lack of dependable and sensitive diagnostics for detection.
Keywords: Abruption, previa, accrete, antepartum hemorrhage

Introduction

Antepartum hemorrhage (APH) is a major global cause of maternal mortality, with developing nations such as India being particularly affected. Early detection and prompt treatment can lower the related morbidity and death in both mothers and fetuses. APH is defined as bleeding from or into the genital tract, occurring from 24 + 0 weeks of pregnancy before the birth of the baby. [1,2] APH complicates 3 – 5 % of pregnancies and is a leading cause of perinatal and maternal mortality worldwide. Up to one-fifth of very preterm babies are born in association with APH and the known association of APH with cerebral palsy can be explained by preterm delivery. Placenta previa and abruptio placenta are the two main causes of APH. These days, a significant portion of the causes of the rising rate of cesarean deliveries are placenta accreta spectrum (PAS) illnesses. In addition, there are cervicitis, vasa previa, vaginal infections, degenerating uterine myomata, foreign bodies, marginal placental separation, genital lacerations, cervical polyps, varicosities (vaginal, vulvar, and cervical), cancer of the cervix, and so forth.

But occasionally, the precise cause cannot be identified, and the issue remains unidentified. With an incidence of placenta previa and abruptio placentae of roughly 0.33% to 0.55% and 0.5 to 1%, respectively, it can complicate roughly 2-5% of pregnancies. [3,4]

Preterm labour, malpresentation, postpartum haemorrhage, increased rates of cesarean sections, large transfusions, coagulation and renal failure, pulmonary edema, and infectious complications like sepsis, shock, and death are just a few of the consequences that can result from APH. [5] Preterm birth, low birth weight, stillbirth, increased admissions to the neonatal intensive care unit (NICU), birth asphyxia, newborn death, and other conditions are examples of the various forms of neonatal difficulties. [6] Because APH has a low incidence of roughly 6/100000 live births, better health facilities, prompt diagnosis and intervention, and greater access to crucial medical treatment, developed countries have much lower APH fatality rates. Maternal mortality from APH remained extremely high in underdeveloped nations like India, at 4.08 per 1000 live births. [7]

Maternal and neonatal mortality, as well as APH, are difficult to prevent, but morbidity can be reduced by prompt diagnosis and treatment, treating underlying and related co-morbidities like anaemia and hypertension, promptly referring patients for

complicated pregnancies like PAS disorders, and delivering those patients to a tertiary care facility with better resources and multi-department coordination. Determining the outcomes for mothers and fetuses in individuals with antepartum hemorrhage was the goal of this investigation.

OBJECTIVES:

1. To study maternal outcome in Antepartum hemorrhage complicating pregnancy.
2. To study fetal outcome in Antepartum hemorrhage complicating pregnancy.
3. To evaluate measures to reduce maternal morbidity and mortality.
4. To evaluate measures to reduce perinatal morbidity and mortality.

Material & Methods:

Study Design: Non-randomized longitudinal prospective observational study.
Study area: Department of Obstetrics and Gynaecology.
Study Period: 1 year.
Sample size: The study consisted of 100 cases.
Sampling Technique: Simple random sampling method.
Inclusion Criteria: All Pregnant women > 28 weeks attending the Department of Obstetrics and Gynaecology, with a history of antepartum haemorrhage.
Exclusion criteria:

- All cases of APH with gestation < 28 weeks.
- Patient suffering from any bleeding disorder.
- Bleeding from sources other than the uterus.

OBSERVATIONS & RESULTS:

Table No. 1: Booked and Unbooked cases of APH

Booked / Unbooked	Number of cases	Percentage of cases
Booked	31	31%
Unbooked	69	69%

In the present study, 69% of cases were unbooked, most of them were referrals from private clinics and Primary Health Centres or did not have even a single antenatal visit. Even though 31% of cases were booked, we could not prevent the event due to the unpredictable nature of its occurrence. In 69% of unbooked cases, 38% were of abruptio placenta and 31% were of placenta previa. In 31% of booked cases, 9% were of abruption placenta and 22% were of placenta previa

In the present study, 59% of cases belonged to the lower socioeconomic status of which 31% were of abruption placenta and 28% were of placenta previa, because of anaemia and early marriages in low socioeconomic groups 41% of cases belonged to the lower middle socioeconomic status of which 16% were of abruption placenta and 25% were of placenta previa.

Table No.2: Classification of APH according to cause

Cause of APH	Number of cases	Percentage of cases
Placenta Previa	53	53%
Abruptio Placenta	47	47%

In the present study, 53% of cases of APH are due to placenta previa and 47% of cases are due to abruptio placenta almost contributing equally.

Table No.3: Age-wise distribution of cases of Antepartum Hemorrhage

Age	Number of cases	Percentage of cases
<20years	15	15%
21-25 years	58	58%
26-30 years	24	24%
>30years	3	3%

In the present study, the most common age group involved is 21-25 years 58%, of which placenta previa contributes to 35% and abruption placenta contributes to 23%. The next common age group involved is 26-30 years 24%, of which placenta previa contributes to 11% and abruptio placenta contributes to 13% Maximum no. of cases were between the age group 20-30 years because of the highest fertility in this age group.

Incidence of APH is higher in multigravida 63% of which placenta previa contributes to 35% and abruptio placenta contributes to 28%, compared to primigravida 37% of which placenta previa contributes to 18% and abruption placenta contributes to 19%, confirming the role of endometrial damage caused by repeated childbirth.

In the present study, APH occurs most commonly in near-term pregnancies,62% in >37 weeks of which placenta previa contributes to 34% and abruptio placenta contributes to 28%, next common gestational age involved was 25% in 34-36 weeks, of which placenta previa contributes to 16% and abruptio placenta contributes to 9%. Less common in the gestational age group 28-33 weeks 13%, of which placenta previa contributes to 4% and abruptio placenta contributes to 9%.

Table No.4: Distribution of cases of APH according to their presenting complaints

Presenting Complaints	Number of cases	Percentage of cases
Pain Abdomen	47	47%
Bleeding per vagina	100	100%
Decreased fetal Movements	38	38%

In the present study, most of the cases of APH present with bleeding per vagina at 100% and pain abdomen at 47%, and 38% of cases present with decreased fetal movements. In abruptio placenta, 53% (n=25) present with decreased fetal movements and 100% (n=100) present with pain abdomen. In placenta previa, 24.5% (n=13) present with decreased fetal movements.

In the present study, pre-eclampsia was seen in 32% of APH cases, of which abruption placenta contributes to 27% and placenta previa contributes to 5%. Previous LSCS was seen in 19% of APH cases of which previa contributes to 13% and abruption contributes to 6% and abortions were seen in 13% of cases, of which abruption contributes to 5% and previa contributes to 8%. Malpresentations were associated with 25% of APH cases of which previa contributes to 23% and abruption contributes to 2%.

In the present study, 45% of placenta previa cases underwent caesarean section out of which 3% were for Type I Previa with CPD, 16% were for Type IIb placenta previa, 12% were for Type III previa, 14% were for Type IV previa. 16% of abruptio placenta cases underwent caesarean section out of which 5% were for fetal distress, 8% were for failure of progression of

labour, and 3% were for previous LSCS with CPD. In abruptio placenta, the most common indication was failure to progress 8% and fetal distress 5%.

Table No.5: Maternal complications of APH:

Complications	Number of cases	Percentage of cases
PPH	42	42%
Maternal collapse	11	11%
DIC	3	3%

In the present study, 42% of APH cases had PPH of which placenta previa contributed to 16% and abruption contributed to 26%, 11% of APH cases had the collapse of which previa contributed to 2% and abruption contributed to 9%, and 3% of cases had DIC contributed by abruptio placenta.

Table No.6: Intra-operative interventions for control of PPH

Intervention	Number of cases	Percentage of cases
Blood Transfusion	100	100%
B Lynch suturing	11	11%
Caesarean Hysterectomy	1	1%
B/L uterine artery ligation	6	6%

In the present study, as anaemia is a pre-existing factor even a small amount of haemorrhage leads to hypotension. So blood transfusion is kept for 100% of cases. 11% of cases had B-lynch suturing, most of them were abruptio placenta required B-lynch due toatonicity,6%of cases underwent B/L uterine artery ligation which was mostly placenta previa due to uncontrolled bleeding from the placental site and 1% of the case i.e. complete placenta previa had caesarean hysterectomy, due to uncontrolled bleeding from lower uterine segment at site of placental insertion.

In the present study, 38% of cases had preterm babies of which abruption placenta contributed to 18% and placenta previa contributed to 20%, among the preterm babies,14% were Intrauterine deaths. 62% of cases had term babies of which abruptio placenta contributes to 29% and placenta previa contributes to 33%. Among term babies, 3 were intrauterine deaths, and 2 were stillbirths.

Table No.7: Fetal Outcome in Patients with APH

Fetal outcome	Number of cases	Percentage of cases
Alive	81	81%
Stillbirth	2	2%
IUD	17	17%

In the present study, 81% of cases were live born, among them, 51% were placenta previa in which 18% were preterm,33% were term and 30% were abruptio placenta in which 6% were preterm and 24% were term. 2% of cases were stillborn, were term abruption placenta, Birth weight <2.5kg in 1 baby,>2.5kg in 1 baby, and uterine Deaths were 17%. Among intrauterine deaths,2% of placenta previa, both were preterm, and birth weight < 2kg and 15% of abruption placenta, in which birth weight <2kg in 8%, birth weight >2kg in 7%, preterm were 12%, term was 3%. 26% of cases needed NICU admission, 22% of babies were discharged healthy where and 4% of babies died in NICU. Among babies who died in NICU, 2% were due to low birth weight and prematurity, and 2% were due to birth asphyxia. Most common cause of NICU admission and perinatal mortality were prematurity and low birth weight. PERINATAL MORTALITY WAS 23%.

Table No.8: Birth weight of babies in APH cases

Birth weight in K.G.s	Number of cases	Percentage of cases
<1.5	4	4%
1.5-2.0	17	17%
2.1-2.5	29	29%
>2.5	50	50%

In the present study, 50% of cases had birth weight > 2.5 kg, of which placenta previa contributes 35% and abruptio placenta contributes to 15%. 29% of cases had birth weight 2.1-2.5 kg of which 13% was of placenta previa and 16% was of abruptio placenta,17% of cases had birth weight 1.5-2.0 kg of which 5% was of placenta previa and 12% was of abruptio placenta and 4% of cases had birth weight <1.5 kg, all of which were contributed by abruptio placenta. All the cases of birth weight of 1.5 kg were preterm intrauterine deaths. Most cases below 2 kg birth weight need NICU admission. In babies with birth weight <2kg, only 3 babies were term, remaining 18 were preterm. In babies with birth weights 2.1-2.5kg, 10 babies were preterm, remaining 19 babies were term. In babies with birth weight >2.5kg, 10 babies were preterm, remaining 40 babies were term.

DISCUSSION:

In poor nations, antepartum hemorrhage is a major contributor to high perinatal mortality as well as maternal morbidity and mortality. In the present study, 69% of cases were un-booked and belonged to poor socio-economic status (59%). This confers a degree of malnutrition and anaemia which could result in poor placental structure formation, including villi and blood vessels. In this study, 31% of cases were booked cases in comparison to 34% in the study by Priyanka Tyagi et al[8] and 36% in the study by Siddhartha Majumder et al[9] and 10.2% in the study by Zakia Sharafat et al[10] and this shows that abruption is not preventable but early diagnosis and early delivery will improve maternal and fetal outcome. In the present study majority (82%) of cases occurred between 21-30 yrs which was comparable to studies done by Priyanka Tyagi et al[8] (61%), Siddhartha Majumder et al[9] (60%), Anamika Purohit et al[11] (69.4%) due to early marriages and highest fertility in that age group.

In the present study, 53% of cases are due to placenta previa and 47% are due to abruptio placenta which has almost equal incidence comparable to other studies by Siddhartha Majumder et al[9] and Anamika Purohit et al.[11] In the present study, 62% of cases were present at >37 weeks of gestational age which was comparable to Priyanka Tyagi et al[8] (62%) due to formation of the lower uterine segment at term gestation. In studies by Siddhartha Majumder et al[9], 61% of cases were present at 33-36 weeks of gestational age and by Sunil Kumar Samal et al[12], 73% of cases were present at 33 – 36 weeks of gestational age.

The patients in the present study had hypertension in 32% of cases. In studies done by Priyanka Tyagi et al[8] (11%), Siddhartha Majumder et al[9] (22%), and Sunil Kumar Samal et al[12] (25.2%). However, the actual number of hypertensive patients would have been higher keeping in view the history of past hypertensive disorder and may have been masked by hypovolemia. The patients in the present study had h/o abortions in 13% of cases where as Priyanka Tyagi et al[8] (16%),

Siddhartha Majumder et al[9] (11%), Sunil Kumar Samal et al[12] (12.8%) which was comparable indicating that may be associated with increased incidence of placenta previa. The patients in the present study had h/o Previous Caesarean Section in 19% of cases where as Priyanka Tyagi et al[8] (27%), Siddhartha Majumder et al[9] (15%), Sunil Kumar Samal et al[12] (13.3%) which was comparable indicating that may be associated with increased incidence of placenta previa.

In the present study, 42% had a post-partum haemorrhage, the majority were managed with uterotonic drugs and uterine packing, 11% required B-lynch sutures, 6% required B/L uterine ligation, and 1 case required caesarean hysterectomy. In a study by Sneha Kishor Wasnik et al[13], 36% of cases had PPH and 3% underwent caesarean hysterectomy and in a study by Sunil Kumar Samal et al[12], 42.2% had PPH and 1.8% underwent caesarean hysterectomy.100 % of cases in the present study had blood transfusion as almost all cases had anaemia as a pre-existing factor even small amount of haemorrhage leads to hypotension.

In the present study, perinatal mortality was 23%, in which IUD accounts for 17%, stillbirth accounts for 2% and early neonatal death accounts for 4%. Most of the cases that are referred from Primary Health Centres were IUFD. 26% of cases needed NICU admission, 22% of babies were discharged healthy whereas 4% of babies died in NICU due to prematurity and low birth weight. In studies done by Anamika Purohit et al.[11] perinatal mortalities were 29.8%, in Siddhartha Majumdar et al.[9] perinatal mortality was 23%, Priyanka Tyagi et al.[8] perinatal mortality was 32%. Good perinatal outcome was observed with early caesarean section and timely neonatal resuscitation.

CONCLUSION:

As an obstetric emergency, APH calls for prompt diagnosis and prompt treatment. The diagnosis of placenta accreta spectrum is increasing due to advancements in imaging modality, despite the lack of dependable and sensitive diagnostics for detection. If placenta previa is found, the couple's education and avoidance of penetrative sexual activity should be the main goals of antenatal treatment. Excellent prenatal care and the start of a massive transfusion protocol series when necessary continue to be the cornerstones of successful maternal and perinatal outcomes in APH. It takes quick thinking and a multidisciplinary team to enhance the outcomes for both mothers and fetuses.

References

1. Rudra A, Chatterjee S, Sengupta S, Wankhede R, Nandi B, Maitra G, Mitra J. Management of obstetric haemorrhage. Middle East J Anaesthesiol. 2010;20:499–507.

2. Mustafa Adelaja L, Olufemi Taiwo O. Maternal and fetal outcome of obstetric emergencies in a tertiary health institution in South-Western Nigeria. ISRN Obstet Gynecol. 2011;2011:160932.

3. Kedar K, Uikey P, Pawar A, Choudhary A. Maternal and fetal outcome in antepartum haemorrhage: A study at tertiary care hospital. Int J Reprod Contracept Obstet Gynecol. 2016;5:1386–94.

4. Arias F, Daftary SN, Bhide AG, et al. Practical guide to high-risk pregnancy and delivery. 3rd. New Delhi: Elsevier; 2008. Bleeding during pregnancy; pp. 323–57. Chapter 13.

5. Sheiner E, Shoham-Vardi I, Hadar A, Hallak M, Hackman R, Mazor M. Incidence, obstetric risk factors and pregnancy outcome of preterm placental abruption: A retrospective analysis. J Matern Fetal Neonatal Med. 2002;11:34–9.

6. Cunningham F, , Leveno KJ, , Bloom SL, , Dashe JS, Hoffman BL, , Casey BM, , Spong CY, , editors. Williams Obstetrics, 25e. McGraw Hill; 2018. Obstetrical Hemorrhage.

7. Park K. Park's textbook of preventive and social medicine. 19th. Banarasi Das Bhanot; Jabalpur: 2007. Maternal and child health; pp. 445–7.

8. Tyagi P et al. Int J Reprod Contracept Obstet Gynaecol. 2016 Nov;5(11):3972-3977.

9. Majumder S et al. Int J Reprod Contracept Obstet Gynaecol.2015 Dec;4(6):1936-193914.

10. Mustafa Adelaja L, Olufemi Taiwo O. Maternal and fetal outcome of obstetric emergencies in a tertiary health institution in South-Western Nigeria. ISRN Obstet Gynecol 2011;2011:160932.

11. Purohit A et al. IOSR-JDMS e-ISSN:2279-0853,p-ISSSN:2279- 0861.Volume 13, Issue 5 Ver.III(May.2014), PP 13-1610.

12. Samal SK et al. Int J Reprod Contracept Obstet Gynaecol .2017 Mar; 6(3):1025-102912.

13. Wasnik SK, Naiknaware SV. Antepartum haemorrhage: Causes & its effects on mother and child: An evaluation. Obstet Gynecol Int J 2015;3:255–8.