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Original Research Article

An Observational Prospective Evaluation of Perinatal Outcome in Early and Late Pregnancy Haemorrhage

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Abstract

Aim: The aim of the present study was to assess the perinatal outcome in early pregnancy hemorrhage and late pregnancy hemorrhage

Material & Methods: An observational prospective study performed within span of 1 year in the Department of Obstetrics and Gynaecology . Total number of 200 women with bleeding per vaginal during pregnancy was enrolled in the study.

Results: Maximum number of cases was concentrated in 26 – 30 years of age with mean age of 28 years. Maximum number of cases was multigravida. Majority of cases were unbooked and booking status was minimal especially with early bleeding group. Maximum numbers of cases were of threatened abortion and minimum were of bleeding due to cervical changes in early pregnancy group. And among late pregnancy group, maximum cases were of placenta previa and minimum were of vasa previa, polyps and carcinoma. Due to perinatal asphyxia, most of the newborns had low APGAR scores at 1 and 5 minutes in late pregnancy bleeding cases as compared to early pregnancy bleeding group. Live newborns of early pregnancy bleeding group showed no significant increase in the complications as compared to late pregnancy bleeding group. Live newborns of late pregnancy bleeding group suffered from a variety of complications of preterm delivery and perinatal asphyxia and so the rate of NICU admissions was also higher.

Conclusion: Vaginal bleeding at any stage of pregnancy is an alarming event and can be potentially life-threatening to mother and fetus. Obstetrician should ensure that patient delivers in a well-equipped centre with NICU facilities and expertization of neonatologist.

Keywords: APH, Mortality, Morbidity, AP, PP, Anaemia.

Introduction

Vaginal bleeding in the first trimester of pregnancy is associated with spontaneous abortion /miscarriage, ectopic-implantation, hydatidiform mole, preterm delivery, and low birth weight. Vaginal bleeding is a relatively common event in the first trimester, reported to occur in 15% to 25% of all pregnancies. [1]

Any vaginal bleeding during pregnancy following the prenatal viability period (end of stage two) is termed antepartum haemorrhage. [2] Antepartum hemorrhage (APH) has been a leading cause of maternal mortality worldwide, especially in developing countries like India. [3] Its early diagnosis and timely management can reduce the associated maternal and fetal mortality and morbidity. The major etiologies of APH are placenta previa and abruptio placenta. Nowadays, with increasing incidence of cesarean delivery, placenta accreta spectrum (PAS) disorders contribute a fair chunk of causes. [3] The factors like poor education, family history of hypertension, glucose-6- phosphate dehydrogenase deficiency, and Down's syndrome were found to be associated with increased APH. [4]

Vaginal bleeding after mid-pregnancy is associated with maternal and fetal risks. Maternal morbidity may be caused by acute hemorrhage and operative delivery, and the fetus may be compromised by uteroplacental insufficiency and premature birth. [5] APH can lead to a range of complications like pre-term labor, malpresentation, postpartum

hemorrhage, higher rates of cesarean section, massive transfusions, coagulation and renal failure, pulmonary edema, and infective complications like sepsis, shock, and death. [6] Neonatal complications vary in the form of pre-term, low birth weight, stillbirth, increased neonatal intensive care unit (NICU) admission, birth asphyxia, neonatal death, and so on. [7] Distal genital tract/ gynaecological bleeding Abnormal placentation Abnormal placental shape Vasa previa. [8]

Being a tertiary care centre, maximum patient of APH referred from periphery for further management, though maternal and perinatal morbidity and mortality is preventable in APH but as patients presented late with complications at the time of admission increases maternal and perinatal morbidity and mortality. Presently, increasing use of ultrasonography for placental localization and to diagnose AP, improved obstetrical and anaesthetic facilities, increasing use of blood and its products to correct anaemia and advanced neonatal care facilities to make increased chances of survival of a preterm infant. [9]

In this study perinatal outcome in early pregnancy hemorrhage and late pregnancy hemorrhage are analysed.

Material & Methods

An observational prospective study performed within span of 1 year in the Department of Obstetrics and Gynaecology Shri Ramkrishna Institute of Medical Sciences and Sanaka Hospital, Durgapur, Durgapur, West Bengal, India. Total number of 200 women with bleeding per vaginal during pregnancy were enrolled in the study.

The patients who presented with vaginal bleeding were divided into:

1. Early pregnancy bleeding < 20 weeks

2. Late pregnancy bleeding > 20 weeks

B

- Women carrying a singleton gestation.
- Planned to deliver at the study site.
- Women intended to carry pregnancy to term.

Exclusion Criteria

- Women carrying multiple gestation.
- Women using assisted reproductive technologies to conceive
- Women not intending to carry pregnancy to term.
- The patients who tested positive for HBV or HCV excluded from study.

Methodology

A total of 200 patients with antenatal haemorrhage were included in this study. All the patients were screened and explained the study procedure in their native language. The patients who were willing to participate and signed the informed consent document were enrolled in the study. A previous history of unexplained foetal loss, pregnancy induced hypertension, LSCS, curettage, previous APH, multiple pregnancies, malpresentation and pre-eclampsia were recorded. Demographic characteristics included age, booking status, area of residence, socio-economic status, and gestational age at presentation were noted. Clinical characteristics included presenting complaints, foetal heart sounds (normal, reduced, and absent), and obstetric factors were recorded. Patients were then subjected to ultrasound of the abdomen in the Department of Radiology performed by an experienced radiologist with Hitachi Aloka Arietta s70 machine. It was done to ascertain uterus height, gestational age, location and size of placenta, presentation of foetus, position of foetal head (fixed or floating), FHS, status of uterus (contracted or relaxed) and intra- or retroplacental clots. Per speculum examination was done to look for cervical OS and presence of bleeding. Per vaginal examination was done to know the status of cervical OS, effacement of cervix, and appropriateness of pelvis.

Laboratory investigations included complete blood counts (haemoglobin, total leucocyte count, differential leucocyte count), liver function test (bilirubin-total/direct/indirect, alanine transaminase (ALT), aspartate transaminase (AST), and albumin to globulin ratio), kidney function test (blood urea, serum creatinine, serum sodium, and serum potassium), bleeding time, clotting time, and prothrombin time-international normalised ratio (PT/INR).

Maternal outcomes noted were PPH, shock, blood transfusion, Included sepsis, HELLP syndrome, mode of delivery (vaginal or LSCS), indication of LSCS, hysterectomy, renal failure, and mortality. Whereas neonatal outcomes included birth weight, neonatal morbidity (IUGR, hypoglycaemia, RDS, birth asphyxia, septicaemia, NICU admission, neonatal jaundice), and neonatal outcomes (live born, IUD, still born, and neonatal death). Finally, association of types of APH with various maternal and neonatal factors and outcomes was assessed. The present study protocol was approved by the institutional ethics committee.

Statistical Analysis: The data was analysed with SPSS (IBM, Armonk, NY, USA) version 23.0 for windows, with the help of statistician. The categorical and continuous variables were represented as frequency (percentage) and mean (standard deviation, SD). Chi-square test was used to assess the association of APH type with maternal

and neonatal factors. A two-tailed probability of value of <0.05 was considered as statistically significant.

Results

Table 1: Baseline characteristics

Age in years	**N**	**%**
<20 Years	10	5
21-25 Years	62	31
26-30 Years	80	40
31-35 Years	42	21
>35 Years	6	3
Gravida		
Primi	80	40
Multi	120	60
ANC care of early pregnancy (N=130)		
Booked	32	24.62
Unbooked	98	75.38
ANC care of late pregnancy (N=70)		
Booked	32	45.72
Unbooked	58	54.28

Maximum number of cases was concentrated in 26 – 30 years of age with mean age of 28 years. Maximum number of cases was multigravida. Majority of cases were unbooked and booking status was minimal especially with early bleeding group.

Table 2: Cases distribution of bleeding during pregnancy

Diagnosis	**N**	**%**
Abortions – Spontaneous	44	22
Threatened Abortion	60	30
Molar Pregnancy	8	4
Ectopic Pregnancy	16	8
Abruptio Placentae	32	16
Placenta Previa	34	17
Others	20	10

Maximum numbers of cases were of threatened abortion and minimum were of bleeding due to cervical changes in early pregnancy group. And among late pregnancy group, maximum cases were of placenta previa and minimum were of vasa previa, polyps and carcinoma.

Table 3: Gestational age at delivery in Early and late pregnancy bleeding

GA in early pregnancy	**No. of Patients**	**%**
>37 Weeks	55	42.30
<37 Weeks	75	57.70
GA in **late pregnancy**		
>37 Weeks	28	40
<37 Weeks	42	60

In Late pregnancy bleeding group, preterm delivery rate was higher than term delivery.

Table 4: One minute and Five minute APGAR scores in early pregnancy bleeding

One minute APGAR score	**N**	**%**
0-3	9	6.93
4-6	16	12.30
7+	105	80.77
Five-minute APGAR score		
0-3	8	6.16
4-6	15	11.54
7+	107	82.30

Live newborns of early pregnancy bleeding group showed no significant increase in the complications as compared to late pregnancy bleeding group. Live newborns of late pregnancy bleeding group suffered from a variety of complications of preterm delivery and perinatal asphyxia and so the rate of NICU admissions was also higher.

Discussion

Pregnancy is an important but potentially stressful time in a woman's life. When an unexpected, potentially dangerous event such as vaginal bleeding occurs, it is extremely upsetting for the expectant mother and father. While the obstetrician

may not always be able to bring good news to these patients, in many cases early intervention can make the difference between life and death for the fetus, and at times the mother as well. Resuscitation of the mother, fetal monitoring, fetal gestational age estimates, an ultrasound to rule out previa as a cause, and obstetrical consultation should be performed in all cases. Early paediatric consultation is also essential when dealing with a viable fetus. Causes of early pregnancy bleeding: Haemorrhage in early pregnancy may be caused by abortion, ectopic pregnancy, trophoblastic disease, cervical carcinoma. It may be caused by pedunculated fibroid, cervical mucus polyp, cervical erosion or vulvar and vaginal lesions. Spotting in the first trimester may be a prelude to haemorrhage in the third trimester.[10]

Table 5: One minute and Five minute APGAR scores in early pregnancy bleeding

One minute APGAR score	**N**	**%**
0-3	14	20
4-6	7	10
7+	49	70
Five minute APGAR score		
0-3	7	10
4-6	4	5.72
7+	59	84.28

Due to perinatal asphyxia, most of the newborns had low APGAR scores at 1 and 5 minutes in late pregnancy bleeding cases as compared to early pregnancy bleeding group.

Table 6: Complications in early and late pregnancy

Complications in early pregnancy	**N**
Nicu admission	2
Sepsis	1
Convulsions	1
Rds	1
Hemorrhage	0
Jaundice	1
Hie	0
Congenital malformations	0
Death	
Complications in late pregnancy	
NICU Admission	15
Sepsis	10
Convulsions	3
RDS	5
Hemorrhage	1
Jaundice	10
HIE	1
Congenital Malformations	1

Maximum number of cases was concentrated in 26 – 30 years of age with mean age of 28 years. Fouzia et al 2010[11] reported a mean of 30 years, Savita et al 2008[12] and Das et al [13] 1975 (26.8 years each). Maximum number of cases was multigravida. Other studies reporting such higher incidence of LPB in multipara (around 5-8 times than that in primi) are- Gilliam et al 2002 [14],William et al 1993 [15], Ananth et al 1996. [16] Majority of cases were unbooked and booking status was minimal especially with early bleeding group. Maximum numbers of cases were of threatened abortion and minimum were of bleeding due to cervical changes in early pregnancy group. And among late pregnancy group, maximum cases were of placenta previa and minimum were of vasa previa, polyps and carcinoma. Due to perinatal asphyxia, most of the newborns had low APGAR scores at 1 and 5 minutes in late pregnancy bleeding cases as compared to early pregnancy bleeding group. APGAR scores and increased perinatal mortality. Various other studies which have postulated the increased risk of pregnancy related complications (primarily due to placental dysfunction) in EPB group, such as placental abruption, preterm labour, IUGR, PPROM, LBW, CS are – Weiss et al 2004 [17], Patel et al 2000 [18], Alcazar et al 2000 [19], Das et al 1996. [20] Increased risk of placental abruption and IUGR could not be documented in present studies, but was reported by Mulik et al 2004 [21], Szekeres-Bartho et al 2002. [22]

Live newborns of early pregnancy bleeding group showed no significant increase in the complications

as compared to late pregnancy bleeding group. Live newborns of late pregnancy bleeding group suffered from a variety of complications of preterm delivery and perinatal asphyxia and so the rate of NICU admissions was also higher. 48 In a study conducted by Yang J, Bleeding in both trimesters was associated with preterm birth due to preterm labor (RR = 3.6, 95% CI: 1.9, 6.8). Bleeding of multiple episodes, on multiple days, and with more total blood loss was associated with an approximate twofold increased risk of earlier preterm birth, PPROM, and preterm labor. In contrast, bleeding in the second trimester only, of a single episode, on a single day, and with less total blood loss was not associated with any category of preterm birth. [23] Recurrent bleeding predicted preterm birth more strongly than did single episodes, consistent with previous studies, as stated by Williams et al. [24,25]

Conclusion

Patient who had vaginal bleeding of any amount, in pregnancy, should be monitored vigilantly. Preparations should be made for premature delivery and measures taken to arrest premature labor as needed. Obstetrician should ensure that the patient delivers in a well- equipped centre where intrapartum and neonatal complications can be recognized and managed with neonatologists. Early recognition of risk factors for early and late pregnancy bleeding is essential. Whether occurring in early or later half of pregnancy, bleeding has significant impact on perinatal outcome. Pregnancy bleeding (irrespective of gestational age), is an independent predictor of adverse perinatal outcome.

References

1. Wittels KA, Pelletier AJ, Brown DF, Camargo Jr CA. United States emergency department visits for vaginal bleeding during early pregnancy, 1993-2003. American Journal of Obstetrics and Gynecology. 2008 May 1;198(5): 523-e1.
2. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller AB, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. The Lancet Global Health. 2014; 2(6): 323-33.
3. Agarwal S, Ranjan M, Sachan S, Kumar L. Antepartum hemorrhage and its maternal and perinatal outcome: An experience at a hospital in North India. Journal of Family Medicine and Primary Care. 2023 Dec 1;12(12):3204-8.
4. Cunningham F, Leveno K, Bloom S, Hauth J, Gilstrap L, Rouse D et al. Obstetrical haemorrhage. Williams Obstetrics. 23rd Edition. New York: McGraw Hill; 2009.
5. Ellen Sakornbut, Lawrence Leeman, Patricia Fontaine. Late Pregnancy Bleeding. Am Fam Physician. 2007 Apr 15;75(8):1199-1206.
6. Sheiner E, Shoham-Vardi I, Hadar A, Hallak M, Hackmon 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.
7. Cunningham F, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Spong CY. eds. Obstetrical Hemorrhage. Williams Obstetrics, 25e. McGraw Hill; 2018.
8. South Australian Perinatal Practice Guidelines.
9. Lakshmipriya K, Vijayalakshmi V, Padmanaban S. A study of maternal and fetal outcome in Antepartum haemorrhage. International Journal of Clinical Obstetrics and Gynaecology 2019; 3(1): 96-99.
10. Hassan W, Abu-Helalah M, Salam A, Elhakim A, Bayazeed H, Latif S, Rehmani R, Das TK. Incidence of early pregnancy bleeding in the Eastern region of Saudi Arabia. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2016 May 1;5(5): 13 93.
11. Sheikh F, Khokhar SA, Sirichand P, Shaikh RB. A study of antepartum haemorrhage: Maternal and Perinatal outcomes. Medical Channel. 2010 Apr;16(2):268-71.
12. Singhal S, Nymphaea NS, Nanda S. Maternal and perinatal outcome in antepartum hemorrhage: A study at a tertiary care referral institute. Internet J Gynecol Obstet. 2008;9(2) 55 80.
13. Das B. Antepartum haemorrhage in three decades. J ObstetGynae India. 1975;25:636-7.
14. Gilliam M, Rosenberg D, Davis F. The likelihood of placenta previa with greater number of cesarean deliveries and higher parity. Obstetrics & Gynecology. 2002 Jun 1;99(6):976-80.
15. William MA, Mittewdro PR. Increasing maternal age a determinant for placenta previa, more important than increasing parity? J Reprod Med 1993;38:425-8.
16. Ananth CV, Wilcox AJ, Savitz DA, Bowes Jr WA, Luther ER. Effect of maternal age and parity on the risk of uteroplacental bleeding disorders in pregnancy. Obstetrics & Gynecology. 1996 Oct 1;88(4):511-6.
17. Weiss JL, Malone FD, Vidaver J, Ball RH, Nyberg DA, Comstock CH, Hankins GD, Berkowitz RL, Gross SJ, Dugoff L, Timor-Tritsch IE. Threatened abortion: a risk factor for poor pregnancy outcome, a population-based screening study. American journal of obstetrics and gynecology. 2004 Mar 1;190 (3) :745-50.
18. Patel BI, Trivedi V. Threatened abortion outcome in relation to intrauterine clot site and not only volume. International Journal of Gynecology & Obstetrics. 2000;70:D44-.

19. Alcazar JL, Ruiz. Uteroplacental circulation in patients with first trimester threatened abortion. Fert Steril.2000 Jan;73(1):130-135
20. Das AG, Gopalan S, Dhahwal LK. Fetal growth and perinatal outcome of pregnancies continuing after threatened abortion. Australian and New Zealand journal of obstetrics and gynaecology. 1996 May;36(2):135-9.
21. Mulik V, Bethel J, Bhal K. A retrospective population-based study of primigravid women on the potential effect of threatened miscarriage on obstetric outcome. Journal of Obstetrics and Gynaecology. 2004 Apr 1;24(3):249-53.
22. Szekeres-Bartho J. Immunological relationship between the mother and the fetus. International reviews of immunology. 2002 Jan 1;21(6):471-95.
23. Yang J, Hartmann KE, Savitz DA, Herring AH, Dole N, Olshan AF, Thorp Jr JM. Vaginal bleeding during pregnancy and preterm birth. American journal of epidemiology. 2004 Jul 15;160(2):118-25.
24. WILLIAMS MA, HICKOK DE, ZINGHEIM RW, MITTENDORF R, KIMELMAN J, MAHONY BS. Low birth weight and preterm delivery in relation to early-gestation vaginal bleeding and elevated maternal serum alpha-fetoprotein. Obstetrics & Gynecology. 1992 Nov 1;80(5):745-9.
25. Jouppila P. Vaginal bleeding in the last two trimesters of pregnancy a clinical and ultrasonic study. Acta Obstetricia et Gynecologica Scandinavica. 1979 Jan 1;58(5):461-7.