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Original research article

ANALYSIS ON PREGNANCY OUTCOME IN THIRD TRIMESTER VAGINAL BLEEDING IN A TERTIARY CARE HOSPITAL, TIRUPATI: A PROSPECTIVE OBSERVATIONAL STUDY

[1]Dr. G. Prameela Devi MD, [2]Dr. G. Parthasarathi Reddy MD, [3]Dr. T. Prathibha Sravanthi MS,
[4]Dr. A.J. Keerthi Sagari MS, [5]Dr. K. Reshma

[1]Professor & HOD, Department of Obstetrics & Gynecology, S.V. Medical College, Tirupati,
Andhra Pradesh, India

[2]Professor, Department of Obstetrics & Gynecology, S.V. Medical College, Tirupati, Andhra Pradesh, India

[3]Associate Professor, Department of Obstetrics & Gynecology, S.V. Medical College, Tirupati,
Andhra Pradesh, India

[4]Assistant Professor, Department of Obstetrics & Gynecology, S.V. Medical College, Tirupati,
Andhra Pradesh, India

[5]Post Graduate, Department of Obstetrics & Gynecology, S.V. Medical College, Tirupati, Andhra Pradesh, India

Corresponding Author:
Dr. A.J. Keerthi Sagari MS

Abstract

Background: Antepartum Haemorrhage accounts to 30% of Maternal deaths as direct cause. APH complicates around 2-5% of all pregnancies, with placenta previa occurring in about 0.33%-0.55% of cases and abruptio placenta for about 0.5-1% of cases. Pregnancy outcome varies from institution to institution. Time to time thorough evaluation of pregnancy outcomes in cases of APH is required in different obstetric care units.

Methods: A Prospective study was conducted for 1yr in 100 pregnant women attending emergency ward or outpatient department with the complaint of bleeding per vaginum in third trimester between 2021-2022

Results: The mean age of study population being 21-25 years. 49% of cases were unbooked. Abruptio placenta accounting to 56% and placenta previa for 42%, unclassified for 2% of APH dmissions. PPH occurred in 33.9% of abruption placenta cases and 28.6% of placenta previa cases. Neonatal deaths accounting to 16 in Abruptio placenta and 7 in Placenta previa.

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Conclusion: Abruptio placenta is associated with poor maternal and perinatal outcome. Investigations should be carried out to determine the extent and physiological effects of the APH. Regular antenatal examinations, timely referrals can avoid poor maternal and foetal outcome. A multidisciplinary approach and senior consultation were required in deciding on the timing and mode of delivery.

Keywords: APH, PPH, Pregnancy outcome, tertiary care hospital, Tirupati

Introduction

Antepartum haemorrhage has been one of the most dangerous obstetrical conditions. In our nation, maternal and perinatal morbidity and mortality are still significantly influenced by antepartum haemorrhage, a serious obstetric emergency. Obstetrical haemorrhage along with hypertension and infections are the famous triad of causes of maternal deaths in both developing and developed countries. In roughly 30% of cases, antepartum haemorrhage was the direct cause of maternal death [1]. APH complicates around 2-5% of all pregnancies, with placenta previa occurring in about 0.33%-0.55% of cases and abruptio placenta occurring in about 0.5-1% of cases. Maternal complications noted in patients with APH are malpresentations, preterm labour, postpartum hemorrhage, sepsis, shock and retained placenta. Many fetal complications like preterm, low birth weight, intrauterine fetal demise, congenital malformation and birth asphyxia may occur. Due to improved obstetrical outcomes, maternal mortality from APH has considerably decreased in developed nations to roughly 6/100000 live births [6]. Maternal mortality in India is 4.08/1000 live births, which is still very high.

Any bleeding into or from the vaginal tract after 28 weeks of pregnancy but before the period of viability is referred to as an antepartum haemorrhage[4].Antepartum haemorrhage quantified as Minor haemorrhage: blood loss < 50 ml, Major haemorrhage: blood loss 50-1000 ml and massive haemorrhage: blood loss > 1000 ml.

Causes of antepartum haemorrhage are placenta praevia, placental abruption, vasa praevia, rupture of marginal sinus, local lesions in the vulva, vagina or cervix and unclassified [5]. Prompt diagnosis, resuscitation and management are essential to save the both fetus and mother. Various extra placental causes are cervical polyp, carcinoma cervix, varicose veins, local trauma, condylomata, cervical erosion etc.

In developing countries, widespread pre-existing anaemia, difficulties in transport to higher centers, less medical facilities, and decreased knowledge on part of patients are prone to high MMR. Although APH cannot be prevented, proactive expectant treatment can considerably lower maternal and perinatal morbidity and mortality related to APH. The current rise in the use of ultrasound for placental localization and placental abruption diagnosis, developed obstetrical and anaesthetic facilities, the use of blood and its components to treat anaemia, and modernised neonatal care facilities to improve a preterm infant's survival chances, all taken together have played a significant role in reducing perinatal as well as maternal morbidity and mortality [2, 3].

In daily practise, an obstetrician must deal with this potentially fatal condition, APH and make a prompt, wise decision to terminate the pregnancy while considering the welfare of both the mother and the foetus and doing so without putting either of them at undue risk.

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Objectives

This study was done to estimate and analyze the outcome of pregnancy in third trimester vaginal bleeding in pregnant women attending Government Maternity Hospital, Tirupati.

Study subjects

This is a Prospective observational study done at Tertiary care centre, Government Maternity Hospital, Tirupati for a period of 1 1/2 yr and the subjects included were 100 Third trimester pregnant women attending the emergency ward and outpatient ward with the complaint of bleeding per vaginum. Patients with genital lesions presenting with bleeding per vaginum were excluded.

Methods

100 third trimester pregnant women attending emergency ward and outpatient department satisfying inclusion criteria were included in the study. After getting informed written consent history regarding the demographic details, vaginal bleeding was taken from the patient or the relatives if the patient was not in good condition. Data was collected regarding Menstrual history, Obstetric history, abdominal pain and loss of foetal movements etc. General examination and systemic examination was carried out. Gestational age calculated with reference to last menstrual period and correlated with the ultrasound examination. In cases with gestational age less than 34wks inj. Betamethasone 12 mg, 2 doses 12 hours apart was given. Patients were kept under observation thereafter. The amount of bleeding was quickly assessed to see if treatment of hypovolemia is urgently needed. Blood tests including CBC, Blood group and Rh type and other investigations were carried out. Vital signs and fetal heart sound were monitored. From the information gathered, clinical diagnosis of placenta previa or Abruptio placenta was put.

As soon as possible, patient was subjected to USG for localization of placenta and status of foetus. Management of the cases was done according to reason of APH, status of foetus, weeks of gestation and maternal conditions. Nature of delivery was noted. Immediate postpartum maternal condition is monitored and complications were observed. APGAR, Birth weight of baby was noted. Perinatal morbidity and mortality were noted. The maternal morbidity in form of wound infection, pyrexia, lactation problems etc. were noted. Both mother and neonate followed for evaluation of general condition until the hospital stay.

Discussion

In this study, maximum cases are between age group 21-25 years, that is total 31 cases (31%). So with increase of age incidence of antepartum haemorrhage is increasing. Here increasing age is an independent risk factor. The mean age group of present study population is 28 ± 5.8 years

In this study, the incidence of APH was peak in the age group of 21-25 years age group (33.9% in abruptio placenta, 28.6% in placenta previa), followed by 31-35 years age group its about (28.6% abruption, 23.8% placenta previa), followed by the age group of 26-30 years (14.3% abruption, 28.6% placenta previa, and 50% undetermined), in 31-35years (14.3% in abruption, 23.8% in placenta previa), in 36-40 years (14.3%

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abruption, 9.5% in placenta previa) followed by 16-20 years age group (8.9% abruptio placenta, 9.5% placenta previa), the present study is similar to the study conducted by Adekanle *et al*., Arya *et al*. in which the majority (40%) of APH patients were between 21-25 years age [7, 8], according to study conducted by Tyagi *et al*. 61% of APH cases were between the ages of 26 and 30 [9].

The majority of cases 49 (49%) were unbooked in the present study and the majority of them were admitted as emergency admissions. 26(26%) were referred from outlying hospitals. Despite the fact that 25 (25%) cases were booked, the majority of them had ANCs. The majority of these cases were unbooked and admitted as emergency admissions. In these cases, both maternal morbidity and neonatal mortality were observed to be higher.

In this study, abruptio placenta (56%) was the most common cause of APH, followed by placenta previa (42%), and unclassified (2%), which is consistent with studies by Adekanle *et al*. and Maurya *et al*., where a greater incidence of placenta previa was found followed by abruptio placenta [7, 8].

In the present study, 50% of cases with abruption had a gestational age of 33-36 weeks gestational age at the time of admission. Compared to the present study Bhandiwad A, *et al*. reported that 62.2% of abruption cases had a gestational age of 28-36 weeks [10].

In present study, placenta previa group, 90.4% had a gestational age of 28-36 weeks gestational age at the time of admission, which was comparable to Bhandiwad *et al*. who reported that 70% of cases of placenta previa had a gestational age of 28-32 weeks [10].

In the present study, the majority of the cases about 42 cases (42%) presented to the emergency room with complaints of painless bleeding within 3hrs of duration. Followed by 28 cases (28%) within 3-6 hrs duration, followed by 17 cases (17%) within 6-10 hrs of duration, followed by 13 cases (13%) presents within 6-10 hrs of duration.

Even most of the cases 70% (70%) reported within 6 hrs of duration, the perinatal outcome was unsatisfactory. Among those 30 cases admitted after 6 hours of duration 9 cases were in shock. So, early admission to the hospital in case of antepartum hemorrhage plays crucial role in saving the antenatal mothers.

The timing and volume of bleeding differed among patients and at various gestational ages due to individual patient variance, regardless of whether there was an abruption, placenta praevia, or another reason. The outcome for both the mother and the fetus should be improved by thoroughly investigating, diagnosing, and treating any history of bleeding per vaginum [11].

The current study included 38(90.47%) patients with placenta previa who were delivered via Cesarean section. This was comparable to the findings of Chakraborty *et al*. (1993) and Bako *et al*. (2012), who found that 82%, 78.3% and 86.8% of placenta previa subjects were delivered by Cesarean section, respectively [12, 13].

Because many of the abruption cases had intrauterine death at the time of presentation, vaginal delivery was preferred in the current study, which included 56 patients with abruption. Vaginal delivered cases are (36%) of the abruption group. Present study results were low, comparative to the study of Hibbard and Jeffcoate's (1966), in which vaginal delivery was reported in 62.2% of patients, and Bako *et al*. reported 63.3% of normal deliveries in patients with diabetes [14].

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2 patients (100%) in the undetermined haemorrhage group were delivered by cesarean. In placenta previa results are 11(26%) deliveries were vaginal. comparable to Bako *et al*. study, in which 23.2% of babies were born vaginally [13].

Five cases (12%) of the placenta previa patients in the current study underwent hysterectomy, caesarean section, diagnosed with placenta accreta. When compared to earlier studies, this was a comparatively large number. The results were published by Pedowitz (1965), Cotton *et al*. (1980), and McShane *et al*. (1985). Placenta accreta was observed to occur in 4.4%, 4%, and 6.32% of cases, respectively [15, 16, 17].

The mode of delivery opted for the cases of third trimester bleeding. 62% of patients with placenta previa and 57% of patients with abruptio placenta have ended up in caesarean section. The difference is not statistically significant (Chi-square = 0.7261, p=0.39).

In present study among 100 cases 31 cases had complications of PPH, 11 cases have coagulation failure, 9 cases have hemorrhagic shock, 4 cases have acute renal failure, 15 cases landed in sepsis, 9 cases have wound gaping complication. Among 100 cases 3 cases has been diagnosed as placenta accreta on MRI.

In the present study, 2 deaths occurred in placenta previa with placenta accreta which had hemorrhage of 2 liters into peritoneal cavity and underwent sub-total hysterectomy landed in shock and acute renal failure.

In this study, 8 (14.29%) patients of abruption and 4 (10.53%) with placenta previa group had>5 blood transfusions. Maximum number of blood transfusions was required in a patient of abruptio placenta with coagulation failure [8].

In the current study, 40(71.4%) of the abruption group and 35 (79.74%) of the placenta previa group reported live births. And 16 (28.5%) cases of abruptio placenta, 7 cases (15.9%) of placenta previa had intrauterine death or stillbirth, and 5 (10%) had neonatal deaths. This was comparable to the study by Jaju KG *et al*., in which 45.5% had either intrauterine death or still birth, and 4.5% died as a result of neonatal complications [18].

Purohit A, *et al*. found that only 15.6% of IUDs or stillbirths were reported. Purohit A, *et al*. reported 7% neonatal deaths, which is comparable to the current study [19]. In contrast, in the Bako *et al*. study, 61% of the births in patients with abruption were stillborn [13]. However, in patients with placenta previa, only 10% of births were stillborn. In the current study among 42 placenta previa cases 34 cases are term babies and 8 cases are preterm babies.

In the current study, 13 (31.58%) cases with placenta previa and 10 (16.07%) cases of abruption both had an APGAR score of below seven at one minute. In a study conducted by Adekanele *et al*., it was observed that 61.1% of infants in the APH group had an APGAR score of less than 7 at one minute. At 5 minutes, 61.1% had an APGAR score of >7 [7]. In the current study, 91% of individuals with antepartum haemorrhage had an APGAR score greater than 7.

Most babies born to APH patients in the current study (32%) weighed 2.5 to 3 kg or less. In cases of abruptio placenta, 42 (78.2%) of the babies were born weighing between 2.5 and 3 kg. Majority 2 cases (100%) of antepartum haemorrhage with an unknown aetiology had birth weights of 2.5 to 3 kg, while 17 (44.74%) of placenta previa cases had birth weights of 2.5 to 3 kg on average.

Similar to Bhandiwad, *et al*. study's where 85% of babies had birth weights under 2.5 kg, the majority of births in the current study had birth weights under 2.5 kg [10].

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Compared to the earlier study, when 67% of infants were born with birth weights ≤ 2.5. Arora, *et al*. findings were comparatively low incidence compared to the prior study's findings, which showed that 67% of infants had birth weights < 2.5 kg [20].

Results

Table 1: Age wise distribution of Cases of Third Trimester vaginal bleeding

Age group	Placenta previa		Abruptio placenta		Unclassified	
	No.	%	No.	%	No.	%
16-20 years	4	9.5	5.0	8.9	0	0
21-25 years	12	28.6	19.0	33.9	0	0
26-30 years	12	28.6	8.0	14.3	1	50
31-35 years	10	23.8	16.0	28.6	0	0
36-40 years	4	9.5	8.0	14.3	1	50

Table 2: Admission status of APH cases

S. No.	Status	Total no of cases	Percentage
1.	Booked	25	25%
2.	Unbooked	49	49%
3.	Referred	26	26%

Table 3: Causes of Third Trimester vaginal Bleeding

Causes of 3rd trimester bleeding	No. of patients	Percentage
Placenta previa	42	42
Abruptio placenta	56	56
Unclassified	2	2

Table 4: Comparison of gestational age in Third Trimester Bleeding cases

Gestational age	Placenta previa (N=42)		Abruptio placenta (N=56)		Unclassified (N=2)	
28 to 32 weeks	7	16.7%	9	16.1%	0	0

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33 to 36 weeks	31	73.8%	28	50%	0	0
37 to 40 weeks	4	9%	19	33.9%	1	50%
> 40 weeks	0	0%	0	0%	1	50%

Table 5: Duration of bleeding per vagina in third trimester pregnancy at the time of admission

Duration in Hours	No of Cases	Percentage
1-3 hours	42	42%
3-6 hours	28	28%
6.1- 10hours	13	13%
>10 hours	17	17%

Table 6: Comparison of mode of delivery across condition (N=100)

Mode of Delivery	Condition		
	Abruption (N=56)	Placenta Previa (N=42)	Undetermined (N=2)
Elective Lscs	0 (0%)	10 (2%)	0 (0%)
Emergency Lscs	30 (53.57%)	24 (63.16%)	0 (0%)
Vaginal delivery	26 (46.43%)	4 (10.53%)	2(100%)

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Table 7: Comparison of complication between Placenta previa and abruptio placenta

Complications	Placenta previa (N=42)		Abruptio placenta (N=56)	
PPH	12	28.6%	19	33.9%
Coagulation failure (DIC)	3	7.1%	8	14.3%
Hemorrhagic shock	4	9.5%	5	8.9%
Placenta accrete	3	7.1%	0	0.0%
Renal failure	1	2.3%	3	5.4%
Sepsis	6	14.2%	9	16.0%
Wound gaping	7	16.6%	2	3.5%
No major complications	11	26.1%	10	17.8%

Table 8: Fetal Outcome in Patients with Placenta Previa and Abruptio placenta

Fetal outcome	Placenta previa n=42	%	Abruptio placenta N= 56	%	Unclassified N=2	%
Alive	29	69%	31	55.30%	2	100%
Dead	7	16.60%	16	28.50%	0	0
Still birth	5	11.90%	4	26.70%	0	0
Deeply asphyxiated	1	2.30%	5	8.90%	0	0

Conclusion

APH cannot be predicted with reliability. Placenta praevia can be diagnosed with ultrasound, although an ultrasound scan does not rule out abruption in advance. There are no sensitive or reliable diagnostic tests for placental abruption, most of the times abruptio placenta is a clinical diagnosis. Therefore, regular antenatal examinations, prompt referral, timely interventions, treatment of anaemia, and a good neonatal intensive care unit can lower maternal and foetal mortality and morbidity. A multidisciplinary approach and senior consultation are necessary when deciding on the timing and mode of delivery.

If vasa praevia is suspected, a number of tests have been described to discriminate between maternal and foetal blood, although they are typically not useful in practise.

Ethics Committee Approval

Before collection of data all the subjects were briefed about purpose of study and consent was obtained. All the investigations were done free of cost so that no financial burden will be imposed on patients. This journal article has been approved by the institutional ethical committee.

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Informed Consent

Informed consent was obtained by participants of the present study.

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