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Dr. Radhika M Gadgi
Final Yr Post Graduate, Department of Obstetrics & Gynaecology, Yenepoya Medical College, Mangalore. Karnataka, India

Dr. Annie Rajaratnam
Associate Professor, Department of Obstetrics & Gynaecology, Yenepoya Medical College, Mangalore. Karnataka, India

Dr. Ayshath Safoorah
Senior Resident, Department of Obstetrics & Gynaecology, Yenepoya Medical College, Mangalore. Karnataka, India

Corresponding Author:
Dr. Annie Rajaratnam
Associate Professor, Department of Obstetrics & Gynaecology, Yenepoya Medical College, Mangalore. Karnataka, India

Maternal outcome in antepartum Haemorrhage: A study at a tertiary care Centre

Dr. Radhika M Gadgi, Dr. Annie Rajaratnam and Dr. Ayshath Safoorah

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Abstract
Antepartum hemorrhage (APH) is a grave obstetrical emergency which is an important cause of maternal mortality besides postpartum hemorrhage and sepsis. It contributes to 15-20% of maternal deaths in India. Maternal complications of antepartum hemorrhage are anemia, postpartum hemorrhage, shock. The aim of study is to find the prevalence of antepartum haemorrhage among pregnant patients in tertiary care hospital and associated risk factors contributing to maternal morbidity and mortality. The present observational study includes total 77 cases diagnosed with APH during the study period (June 2017 to March 2020). The parameter of the patients were documented in the study includes: demographic data, cause for APH, maternal outcome and difficulties faced during the management from the admission- counseling, pre op requirements, delivery and post natal period. A total of 77 patients were diagnosed with APH (Antepartum haemorrhage) during the study period and the institutional prevalence is 1.78%. The main cause of APH were Abruption which was seen in 40 (51.97%) patients and Placenta Previa was seen in 34 (44.15%) of the patients. The patients show significant difference in prevalence of abruption and placenta previa on the basis of age, parity, hemoglobin level and gestational age at the time of delivery. APH is a high-proportion obstetrical risk and one of the most severe cause of maternal mortality and morbidity. Therefore, prevention, early detection and rapid management should focus on clinical treatment.

Keywords: Antepartum haemorrhage, placenta previa, abruption of placenta

Introduction
India is the country that accounted for highest global maternal deaths (17%) [1]. Antepartum haemorrhage (APH) has always been one of the most feared complications in obstetrics. Antepartum haemorrhage is still a grave obstetric emergency contributing to a significant amount of maternal and perinatal morbidity and mortality in our country [2]. APH is defined as bleeding from the genital tract from the time of viability of pregnancy to the delivery of the baby [3]. The World Health Authority defines antepartum haemorrhage as bleeding after 28th week of pregnancy [4].
APH complicates 0.5–5% of pregnancies which varies with sociodemographic variables [5, 6]. The main causes of APH are placenta previa and abruptio placentae; however, the exact cause of bleeding in some cases may be undetermined [6]. The factors like poor education, family history of hypertension, glucose-6-phosphate dehydrogenase deficiency, and Down's syndrome were found to be significantly associated with increased APH.
In a comparison of maternal risk factors, research reports concluded that abruption is more likely to be related to conditions occurring during pregnancy (preeclampsia, abdominal trauma, intrauterine infections, prelabor rupture of membranes, polyhydramnios, elevated maternal serum alpha fetoprotein, smoking, and substance abuse) and placenta previa related to conditions existing prior to the pregnancy (uterine scar, manual removal of placenta, curettage, advanced maternal age, multiparity, and previous placenta previa) [5].
Presently increase in use of ultrasound for placental localization and to diagnose abruption placenta, improved obstetrical and anesthetic facilities, increase in use of blood and its products to correct anemia and advanced neonatal care facilities to make increased chances of survival of a preterm infant. This has played important role in decreasing perinatal as well as maternal morbidity and mortality [2].
Antepartum haemorrhage quantified as [7].
Minor haemorrhage: blood loss < 500 ml
Major haemorrhage: blood loss >1000 ml
Massive haemorrhage: blood loss > 2000 ml

Prompt diagnosis, resuscitation and management are essential to save the mother and fetus. In day to day practice, an obstetrician has to tackle life threatening condition of APH and take a timely judicious decision of terminating pregnancy, keeping in mind the welfare of both the mother and the fetus without exposing either of them to undue risk. [2]

Maternal complications of APH include hypovolemic shock, disseminated intravascular coagulation, and acute renal failure.[8] It also includes higher rates of cesarean sections for placenta previa, peripartum hysterectomies (2.1%), and postoperative anemia (7.3%)

As APH stands out as a serious, life threatening condition resulting in significant maternal and perinatal morbidity and mortality, it is particularly important to appraise the pattern of this condition in a developing country for better maternal healthcare services. The aim of study is to find the prevalence of antepartum haemorrhage among pregnant patients in a tertiary care hospital and associated risk factors contributing to maternal morbidity and mortality.

Materials and Methods

This was an observational study is carried out at Department of Obstetrics and Gynecology at a tertiary care centre after getting approval from the Institutional Ethical Committee.

During the period from June 2017 to March 2020 were 4337 deliveries were conducted in the Institution. A list of all patients that had APH from June 2017 to March 2020 were included in our study. The clinical definition of the APH included in the study was bleeding from the genital tract from the time of viability of pregnancy (from 28 weeks of gestation and beyond in this study) to the delivery of the baby. [9]

Cases with bleeding PV with gestational age <28 weeks, patient suffering from any other bleeding disorder and bleeding from a source other than uterus were excluded from the study.

The following parameter of the patients was noted for the study

- Demographic data of patients.
- Cause for APH
- Maternal outcome – immediate cesarean section, ICU admission, blood transfusion, number of hospital stay, other complications.
- Difficulties faced during the management from the admission- counselling, pre op requirements, delivery and post natal period. Protocols were formulated for safe delivery methods.

Statistical analysis was done using SPSS version 22. Results were presented in tabular form. *P*< 0.05 was considered significant.

Result

A total of 77 patients were diagnosed with APH during the study period giving an institutional prevalence of 1.78%. The demographic profile of patients is shown in **(**Table 1). The most common clinical presentation was bleeding P/V (66.23%) and pre-eclampsia (40.25%). (Table 2). The main cause of APH were Abruption which was seen in 40 (51.97%) patients and Placenta Previa was seen in 34 (44.15%) of the patients. (Table 3) The patients show significant difference in prevalence of abruption and placenta previa on the basis of age, parity, hemoglobin level and gestational age at the time of delivery. (Table 4) There were no maternal deaths in our study. However 4 cases underwent peripartum hysterectomy. Blood transfusion was required in 40 patients. The result of APH was anemia and shock which was seen in majority of the patients. (Table 5)

Table 1: Demographic profile of women

Parameter		No of women	Percentage (%)
Socio Economic Status	Poor	64	83.11%
	Satisfactory	13	16.89%
Booking Status	Booked	28	36.36%
	Unbooked	49	63.64%
Parity	Primi	27	35.06%
	Multi	50	64.94%

Table 2: Clinical Presentation

Clinical presentation	No. Of cases	Percentage (%)
Bleeding P/V	51	66.23%
Pre-eclamptic features	31	40.25%
H/O anemia with APH	23	29.87%
Pain Abdomen	20	25.97%
Previous H/o placenta praevia	4	5.19%

Table 3: Causes of antepartum hemorrhage

Cause of APH	No of Patients	Percentage
Abruption	40	51.97
Placenta Previa	34	44.15
Placenta Increta	2	2.59
Placenta Accreta	1	1.29
Total	77	100

Table 4: Comparison of socio-demographic factors between abruptio placenta & placenta previa.

Group	abruption	placenta previa	chi square value	P value
Age				
20 – 24 years	2	5	12.10	0.007*
25 – 29 years	15	20		
30 – 34 years	21	5		
35 – 39 years	2	4		
Parity				
0	8	18	6.29	0.045*
1-2	21	11		
2-5	7	7		
Mode of Delivery				
FTVD	1	0	1.74	0.41
LSCS	38	34		
PVD	1	0		
GA at delivery (weeks)				
28 – 32 weeks	13	3	17.65	0.001*
33 - 36 weeks	17	5		
>37 weeks	8	24		
Hemoglobin Level (gm/dl)				
< 6	8	3	13.69	0.01*
6 – 8	11	4		
8 – 10	12	12		
>10	9	15		
Associated Risk Factors				
Yes	18	30	59.63	0.01*
No	24	5		
No of Blood Unit Transferred				
0	18	19	4.69	0.27
1	11	9		
2	8	6		
3	2	0		
4	1	0		

*Significant

Table 5: Maternal Parameters of the patients with APH

Maternal Parameters	Frequency	Percent
Maternal Morbidity		
Bladder rent required	1	1.30
Chronic Hypertension	3	3.89
Chronic Kidney Disease	1	1.30
DIC	3	3.89
Died of severe renal Cortical Necrosis	1	1.30
Left Ventricular Dysfunction	1	1.30
Nil	65	84.42
Past Obstetrics History		
Primi	27	35.06
Previous Abortions	5	6.49
Previous LSCS	19	24.67
Previous LSCS/ Abortion	4	5.19
Previous NVD	22	28.57
Associated Risk Factors		
GDM	4	5.19
GHTN	1	1.30
GHTN and Hypothyroid	2	2.60
Hypothyroid	2	2.60
Imminent eclampsia	3	3.89
Mild pre-eclampsia	2	2.60
Severe pre-eclampsia	7	9.09
Severe pre-eclampsia/DIC	2	2.60
Severe pre-eclampsia & Hypothyroid	4	5.19
Severe pre-eclampsia/ HELLP	2	2.60
Nil	48	62.34
Mode of Delivery		
Emergency LSCS	49	63.64
Emergency LSCS with B/L uterine Artery ligation	21	27.27
Emergency LSCS with Sterlisation	1	1.30
Emergency LSCS – Proceed to Hysterectomy	4	5.19
Vaginal Delivery	2	2.59
Maternal Complication		
Post Partum Hemorrhage	28	36.37
Caesarean	69	89.61
Blood Transfusion	40	51.90
Peripartum Hysterectomy	4	5.19
CCU Admission	8	10.30
Death	0	0.00
Maternal outcome		
Postpartum Anemia	31	40.25
Hypovolemic Shock	26	33.77
PPH	13	16.89
Coagulation Failure	3	3.89
Kidney Failure	2	2.60
Renal Failure	1	1.30
Sepsis	1	1.30
Death	0	0.00

Discussion

In the day to day practice, an obstetrician has to tackle life threatening condition of APH and take a timely judicious decision of terminating pregnancy, keeping in mind the welfare of both the mother and the fetus without exposing either of them to undue risk.

The prevalence of APH was 1.78% in this study which is comparable to other studies [3, 10] and 2.53% [1]. It is however lower than 3.8% documented in the study of Majumder S *et al*., 5.4% documented in Pakistan [11] and 15.3% from Qatar [12]. Although the study conducted in Tamil Nadu had shown 1.2% prevalence of APH [2].

The leading cause of antepartum hemorrhage in this study was found to be abruption in placenta followed by placenta previa which was similar to the findings of Takai *et al*. [3] It was in opposition to findings in Southwestern Nigeria [13] in which placenta previa was found to be the leading cause. Hypertension has also been found to be the most consistent predisposing factor associated with abruptio placentae [14].

Blood transfusion was required in many patients (64.93%) and ≥5 units were given in 1 case of placenta Increta, 1 case of placenta Accreta and 1 case of abruption placenta. The result was in accordance to the study by Maumdar S *et al*. [15].

The hemoglobin was less in majority of the female at the time of admission but there were no difference seen among the abruption and the placenta previa. In abruptio placenta the rate of caesarean section was 95% while in all cases of placenta previa the mode of delivery was caesarean section. The result shows significant difference with the study of Majumdar S *et al*. [15] where LSCS were seen only in 55.8% cases of abruption.

There was no maternal mortality in any of the cases of the study. The zero mortality recorded in this study may be due to the higher number of patients in that study and on the other hand improved blood banking services and emergency services scheme provided by our hospital. So there is still need for improvement in Good referral, transport facilities, medical facilities and blood banking services in order to reduce the maternal mortality rate.

Conclusion

APH is a high-proportion obstetrical risk and one of the most severe cause of maternal mortality and morbidity. Therefore, prevention, early detection and rapid management should focus on clinical treatment. Pregnant women with APH should also be taken into consideration as having a high risk and prompt handling by a training team and women at risk of APH should be encouraged to book prenatal care and to be delivered in centers with blood transfusion and operating services facilities.

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