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Maternal and Perinatal outcome In Cases of Antepartum Hemorrhage

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Abstract:
Background: Antepartum haemorrhage (APH) is an emergency obstetrical condition that accounts for 2-5% of pregnancies and contributes to high level of maternal and perinatal mortality and morbidity. This was an analytical study of cases of APH to know about the perinatal and maternal outcome. Method: This prospective observational study was conducted on 200 women diagnosed with APH admitted in the Department of Obstetrics and Gynaecology, at tertiary care center during a period from July 2014 to June 2016. Results: The overall incidence of APH was 2.04% and majority of them had abruptio placenta (101;50.5%) followed by placenta praevia (98;49%) and 1(0.5%) case was of vasa praevia. Anaemia (82.5%) was the commonest maternal morbidity. Most common complication due to APH was PPH (14.5%) and DIC (10%). Overall, caesarean section rate was high in case of APH (68%) especially due to Placenta Previa (69.8%). Among 200 cases of APH, there were 100(50%) live birth, 84(42%) IUD, 16(8%) NND, 110(55%) preterm birth and 39(19.5%) newborns required NICU admission. maternal mortality was 2% & perinatal mortality was 50%. 2% of mothers required ICU monitoring. Conclusion: Based upon observations made during this study, it is concluded that APH is a grave and potentially life-threatening condition for mother and foetus which taxes the limit of even the best equipped maternal and neonatal units. Study definitively shows that timely diagnosis and expert management by experienced clinician at all levels will help in improving maternal and fetal outcome in cases of APH.

Keywords: Antepartum haemorrhage; Mortality; Morbidity; Perinatal and maternal outcome; Abruptio placenta; Placenta praevia.

Introduction

Any bleeding from the genital tract during pregnancy, after the period of viability until the delivery of the fetus (end of the second stage) is defined as antepartum haemorrhage (APH) [1]. It continues to be an important cause of maternal and fetal mortality and morbidity worldwide, especially in developing countries like India. In those cases where a cause is identified, placental abruption and placenta praevia are two common responsible conditions. Nowadays, with increasing incidence of cesarean delivery, placenta accreta spectrum (PAS) disorders contribute a fair chunk of causes. The other causes are cervical polyps, varicosities (vaginal, vulvar, and cervical), cancer of the cervix, cervical/endocervical erosions, cervicitis, vasa previa, vaginal infections, bloody show, genital lacerations, degenerating uterine myomata, foreign bodies, marginal placental separation, and so on. However, in some cases, the exact cause cannot be ascertained and remained of undetermined origin. 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 placentae (AP) about 0.5-1% [2, 3].

The management of APH has changed little over the recent past. Availability of ultrasound has radically changed screening, diagnosis, and management of women with placenta praevia. The frequency of placenta accreta appears to be increasing, and ultrasound can be useful for antenatal identification. Prenatal diagnosis dramatically improves the perinatal mortality associated with vasa praevia. Massive hemorrhage is still responsible for maternal deaths. There is an appreciable decline in maternal & fetal mortality & morbidity in cases of antepartum hemorrhage because of improvement in antenatal, intranatal & postnatal care in recent years

[4]. So, this was an analytical study of cases of antepartum hemorrhage to know about the perinatal and maternal outcome.

Materials and Methods

This prospective observational study was conducted in the Department of Obstetrics & Gynecology, at tertiary care center during a period from July 2014 to June 2016. During the study period, a total 200 cases of antepartum haemorrhage were studied. All cases of pregnancies complicated by antepartum haemorrhage, the cases in which APH was clinically suspected and later on confirmed sonographically, patients with clinical criteria of APH (complain of bleeding per vaginum after 20 weeks of gestation) and patient who followed up, investigated and those in which fetal outcome recorded were included in the study.

A detailed history was taken including previous obstetric history. A performa was filled up in every case. The age, gravida status, gestational age, menstrual history, past, family, and personal history were all recorded. General physical examination was done in every case. Obstetrics examination included per abdominal, per speculum and per vaginal examinations after USG. Routine investigations were carried out. Specific investigations were carried out when required. Ultrasound was done in every case and details of viability, gestational age, presentation, placenta, effective fetal weight, and any gross congenital anomaly were recorded in detail. Doppler was carried out when indicated.

Management protocols were recorded in terms of chief complaints of patient, maternal, and fetal condition. Induction if done, mode of delivery, fetal outcome was all recorded. Mother and baby both were followed up till discharge.

Data Analysis

The data were collected and entered in Microsoft Excel sheet and then statistically analyzed using SPSS Version 20.0. Continuous variables were expressed as mean ± SD and categorical variables were summarized as frequencies and percentages.

Observations and Results

The overall incidence of APH was 2.04% and majority of them had abruptio placenta (101; 50.5%) followed by placenta praevia (98; 49%) and 1(0.5%) case was of vasa praevia. The incidence of APH was higher in the age group of 26-30 year as shown in table 1. Majority (118; 59%) of the cases were from the lower socio-economic class & 38% (76 cases) from middle class, whereas from higher class it was only 3% (6 cases) of cases. Total 95(47.5%) cases of APH were booked whereas 105(52.5%) cases were un-booked emergency cases.

Table 1: Age distribution of the cases

Age in years	Abruptio placenta (n=101)	Placenta praevia (n=98)	Other (n=1)	Total (n=200)
<20	03	06	01	10
21-25	32	31	-	63
26-30	47	43	-	90
31-35	18	15	-	33
>35	01	03	-	04

PIH was most common cause of the abruptio placenta (38 cases) whereas for placenta previa most common cause was prev. uterine scar accounting for 41 cases out of 98 cases. However total 90 cases out of 200 cases of APH were of unknown cause, (Table 2).

Table 2: Distribution of cases according to precipitating factors in APH

Precipitating factors	No. of cases			Total (n = 200)
	Abruptio placenta(n=101)	Placenta praevia(n=98)	Other (n=1)	
P/H/O APH	01	02	-	03
PIH	38	-	-	38
multiparity	11	11	-	22
Advanced maternal age	07	08	-	15
Trauma	04	-	-	04

Multifetal gestation	01	01	-	02
Prev.uterine scar	-	41	-	41
Idiopathic	47	42	01	90

The most common presentation of abruptio placenta was in the form of mixed variety (concealed & revealed) (84 cases) whereas 17 cases out of 101 cases were presented as a concealed variety of abruption. 65 (63.7%) cases of placenta previa were of grade 4 out of 98 cases followed by grade 2 (15 cases), grade 1 (10 cases) and grade 3 (8 cases).

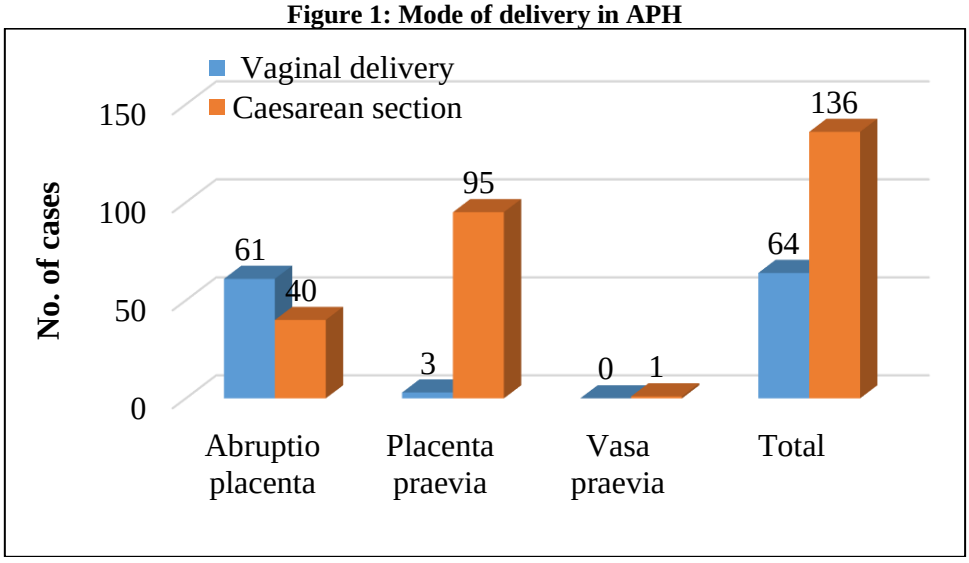
The incidence of APH due to abruptio placenta was higher among nullipara patient, 31 cases (15.5%) whereas that due to placenta praevia was higher among primi and 2nd para patient, 67 cases (33.5%). Most of the cases of antepartum haemorrhage (96 cases out of 200 cases) present at the gestational age of 33 to 36 weeks. No USG available for 4 cases. Most of the patients (82.5%) were anaemic (<10.9gm%) at the time of admission, (Table 3).

Table 3: Parity, gestational age and Hb (gm%) at the time of admission

Variable		**No. of cases**			**Total (n = 200)**
		Abruptio placenta (n=101)	**Placenta praevia (n=98)**	**Other (n=1)**	
Parity	Nulli para	31	18	1	50
	Para 1 & 2	53	67	-	120
	Para 3 & 4	13	13	-	26
	≥para 5	04	00	-	04
Gestational age	<28 weeks	24	6	-	29
	29-32weeks	29	19	-	48
	33-36weeks	41	54	1	96
	>37weeks	3	19	-	23
Hb (gm%)	≤5.9	13	4	1	18
	6-8.9	36	32	-	68
	9-10.9	40	39	-	79
	≥11	12	23	-	35

The overall c section rate was 68% in present study, out of which 69.8% c section was done in cases of placenta previa as depicted in figure 1.

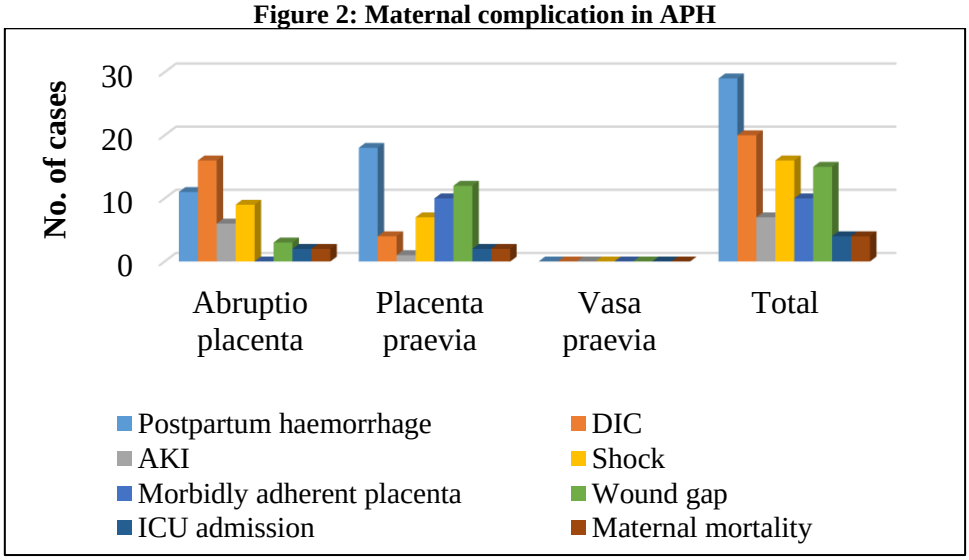
Figure 1: Mode of delivery in APH



Pregnant women with APH were at higher risk for developing complication like PPH (14.5%), DIC (10%), AKI (3.5%), Shock (8%), wound gap (7.5%) etc, (Figure 2). There was a need of intrauterine packing in 4% (8) cases, uterine devascularization in 10.5% (21) cases & obstetric hysterectomy in 8.5% (17) of cases as a

treatment of complication in case of APH. 64% of the cases of APH required blood transfusion. 28.5% cases required FFP transfusion, 2% cases required cryoprecipitates transfusion and 20% cases required PRC transfusion.

Figure 2: Maternal complication in APH



According to table 4, out of total 200 cases of APH, there were 100 (50%) live birth, 84(42%) IUD, 16(8%) NND, 110(55%) preterm birth & 39(19.5%) newborn required NICU admission. Perinatal mortality was 50% in present study out of 200 cases of APH, 105(52.5%) cases were having baby of low birth weight(<=2kg).

Table 4: Perinatal outcome in cases of APH and in terms of birth weight in APH

Fetal outcome		**No. of cases**			**Total**
		Abruptio placenta	**Placenta praevia**	**Vasa praevia**	
Perinatal outcome in cases of APH	Live birth	26	73	01	100
	IUD	67	17	-	84
	NICU admission	21	18	-	39
	NND	08	08	-	16
	Preterm birth	80	30	-	110
Birth weight (kg)	≤2	74	31	-	105
	2.1-2.5	18	36	-	54
	≥2.6	09	31	01	41

Figure 3 shows that increase in size of retro placental clot increases number of still birth.

Figure 3: Association of size of clot with perinatal outcome

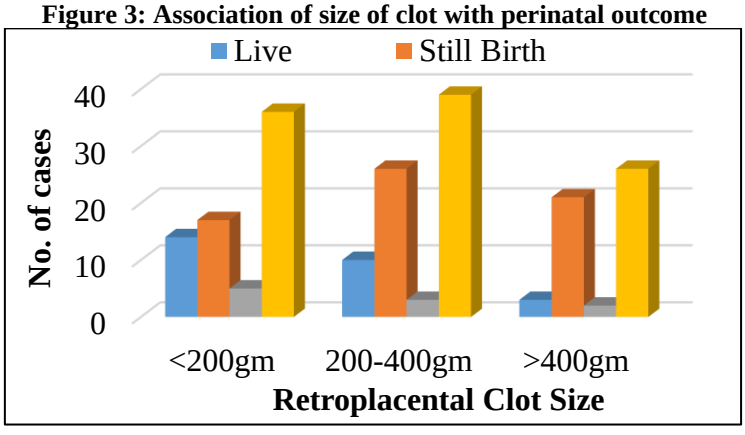


Table 5 shows that maternal mortality in case of APH was 2% and ICU monitoring required in 2% of cases.

Table 5: Maternal outcome in APH

Maternal outcome	No. of cases			Total (n=200)
	Abruptio placenta	Placenta praevia	Vasa praevia	
Healthy	99	96	01	196
ICU admission	02	02	-	04
Maternal mortality	02	02	-	04

Discussion

In the present study, out of 200 cases of APH, there were 101 cases of abruptio placenta (50.5%), 98 cases of placenta praevia (49%) and 1 case was of vasa praevia (0.5%). Thus, overall incidence of APH was 2.04% which is comparable with the study done by Jain et al (2.43%) [5] and Arora et al (2.53%) [6]. However, the incidence was less compared to the study done by Sheikh F et al (5.4%) [7] and our incidence of APH was more than study conducted by Anjankar PS et al (1.09%) [8]. The incidence of APH was higher in the age group of 26-30 year which similar to the Sheikh F et al [7] and Maurya A et al study [9]. Incidence of APH was high among un-booked-emergency cases (52.5%) as compared to booked cases (47.5%). This may be due to booked patients having the benefit of regular ANC, early detection of high-risk factors and their earliest interventions. So proper ANC, early identification, and preventive measures of high-risk factors reduced the incidence of APH.

PIH was most common cause of the abruptio placenta accounting for 38 cases out of 101 cases, other causes were multi parity, advanced maternal age, trauma. multifetal gestation & prev. H/O APH etc., whereas for placenta previa, most common cause was prev. uterine scar accounting for 41 cases out of 98 cases followed by other causes like multi parity, advanced maternal aage, multifetal gestation & prev. H/O APH etc. However total 90 cases out of 200 cases of APH were of unknown cause. These findings are correlated with the study conducted by Kedar K et al [2] and Anjankar PS et al [8].

Incidence of APH was higher in primi-2nd para (60%). Most of the cases (48%) present at the gestational age of 33 to 36 weeks resulting in preterm delivery which is similar to study done by Rachkonda L et al [10]. However, the incidence of APH was more in multigravida previously [7, 11], but nowadays because of intensive family planning program & awareness of small family norm, there is marked decline in overall cases of multigravida.

The overall c section rate was 68% in present study which is more compare to study done by Sheikh F et al (57.1%) [7] but less compare to Maurya A et al study (94%%) [9], out of which 69.8% c section was done in cases of placenta previa where in abruptio Placentae cesarean section rate is comparatively less which was mainly to improve fetal salvage and to reduce maternal complications.

Most common complication due to APH was PPH (14.5%) and DIC (10%). Risk of PPH was less comparable to previous studies [7, 9, 11], but the incidence of morbidly adherent placenta was high in our study (10.2%) which is directly contributed by increasing number of caesarean section and so that placenta previa, now a days. Abruptio placenta cases were most commonly complicated by DIC and AKI in present study. Covelaire uterus was found in 9.9% of cases. ICU admission required in 2% and maternal mortality occurred in 2% of cases. There was a need of intrauterine packing in 4% cases, uterine devascularization in 10.5% cases & obstetric hysterectomy in 8.5% of cases as a treatment of complication in case of APH. Obstetric hysterectomy was performed most commonly for morbidly adherent placenta in view of increase rate of caesarean section.

Most of the patients (82.5%) were anaemic (<10.9gm%) at the time of admission, so majority (64%) of the patients required blood transfusion similar to Rachkonda L et al (66%) study [10]. Increase in blood transfusion rate in cases of Placenta Previa was because of lower segment, which is relatively nonretractile, bleeds more because of low implantation of placenta & more no. of open uteroplacental sinuses. In Abruptio Placentae most of the times uterus contracts but in cases of severe anemia or couvelaire uterus, uterus become atonic causing PPH & DIC requiring blood component transfusion.

In present study, maternal mortality was 2% and perinatal mortality was 50% which is correlated with the previous studies [2, 7, 12]. Perinatal mortality was higher in abruptio placentae than placenta previa probably

because of sudden separation of placenta. Prematurity and low birth weight are two leading causes of preinatal mortality and morbidity. So, over all maternal (98%) & perinatal (50%) outcome was good in present study due to proper obstetric care, availability of wide range of antibiotics & blood transfusion, advance in anaesthesia at our institute. Study definitively shows that timely diagnosis and expert management by experienced clinician at all levels will help in improving maternal and fetal outcome in cases of APH. Educating the pregnant mother about the importance of antenatal care and accessibility to quality antenatal services would go a long way in bringing low maternal and perinatal morbidity and mortality related with APH. By using USG, color Doppler for early diagnosis appropriate management and early intervention helps for better outcome. Intensive family program and awareness of small family norm helps reducing cases of APH in relation with age & parity.

Conclusion

Based upon observations made during this study, it is concluded that APH is a grave and potentially life-threatening condition for mother and foetus which taxes the limit of even the best equipped maternal and neonatal units. Abruptio placenta results into more serious complications than placenta praevia. There is a high incidence of operative interference in these high-risk patients. It can be prevented by early registration, regular antenatal care, early detection of High-risk cases, early intervention. In India, it is essential to strengthen the emergency transport facilities from periphery to tertiary care centre as correct intervention at the appropriate time in these patients is crucial to bring out a good outcome of pregnancy.

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