

# Antepartum haemorrhage: causes & its effects on mother and child: an evaluation

## Abstract

**Objective:** Aim of the present study was to find the demographic profile, type of APH, maternal and perinatal complications.

**Method:** It is a prospective study carried out in a tertiary care hospital, Mumbai, India over a period of 2 yrs from Sept 2010 to Aug 2012 on 124 women admitted with the diagnosis of APH.

**Results:** The incidence of APH was 1.31%. 73 % cases of APH were associated with Pregnancy induced hypertension suggesting PIH is one of the major risk factors. Maternal and perinatal morbidity was very high with increased rates cesarean section 90%, post partum hemorrhage (36%), need of blood transfusion (75%), preterm deliveries (65%), low birth weight (40%) and NICU admission (44%). Though there is no maternal mortality due to timely intervention but 3% patients underwent Obstetric Hysterectomy and 6.4% required CCU admission. Perinatal mortality was very high (21%).

**Conclusion:** There is very high maternal and perinatal morbidity and perinatal mortality in APH.

**Keywords:** antepartum hemorrhage, maternal and perinatal morbidity and mortality

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## Introduction

Complications involving the placenta, membranes, cord and foetus usually place the foetus at risk and may also increase maternal risk in the intrapartum period. Antepartum hemorrhage is one of the major complication.<sup>1</sup>

Antepartum haemorrhage is an obstetric emergency contributing to a significant amount of perinatal & maternal morbidity and mortality. Antepartum haemorrhage is defined as bleeding from the vagina after 24weeks. It occurs in 2-5% of pregnancies and is an important cause of fetal and maternal death. Thirty percent of maternal deaths are caused by antepartum haemorrhage of which 50% are associated with avoidable factors.<sup>2</sup> The causes of antepartum hemorrhage can be divided into three main groups, placenta previa, placental abruption and others. Placenta previa exists when the placenta is implanted wholly or in part into the lower segment of the uterus. An abruptio placenta is the condition whenever bleeding occurs due to premature separation of a normally sited placenta. Other causes are cervical polyp, cervical carcinoma local lesions of vagina and cervix. Systemic diseases like leukemia & bleeding disorders are rare causes of APH. Placenta praevia and Abruption placenta account for almost half cases of APH.<sup>3</sup>

Maternal complications of APH are malpresentation, premature labour, postpartum hemorrhage, shock, retained placenta. They also include higher rates of caesarian section, peripartum hysterectomy, coagulation failure, puerperal infections and even death. Fetal complications are premature delivery, low birth weight, intrauterine death, congenital malformations and birth asphyxia.<sup>4</sup> In developing countries like India, women frequently experience adverse effects of obstetric haemorrhage due to widespread pre-existing anaemia, difficulties with transport and overwhelming inadequacies of maternity services.<sup>5</sup>

## Objectives

The present study was conducted at a tertiary health care hospital Mumbai India. Study incidence, demographic profile, various etiological factors associated with APH and types of APH. Study maternal and perinatal outcome in APH.

## Material and methods

This is a prospective study carried out over a period of two years (September 2010 to August 2012) on all the women who were admitted with a diagnosis of APH at a tertiary care institute Mumbai India There was a total of 9452 deliveries during this period and 124 women had APH. Age, parity, previous obstetric history (history of lower segment caesarean section or medical termination of pregnancy by dilation and curettage) was noted down. Records about mode of delivery, associated maternal complications such as pre-eclampsia, post partum hemorrhage, need of blood transfusion, obstetric hysterectomy and critical care unit admission, perinatal outcome in terms of maturity, birth weight, perinatal mortality, neonatal intensive care unit admission were noted and analysed. Data was presented in tables and diagrams.

## Results

During the two-year study period involving 124 women with a diagnosis of APH, The following results were obtained.

### Maternal outcome

The incidence APH was 1.311 %. Placenta previa is 0.835% and that of abruptio placenta is 0.476%. The incidence of APH was 39% in the age group 26 - 30 years and 22% in age more than 30 years. Seventy two percent of cases of APH were multigravida. 38% of whom were gravida 3 & gravid 4. Fifty seven cases (46%) had a history of previous uterine surgery. Thirty three out of 45 cases of

abruption (73%) associated with pregnancy induced hypertension. Out of the total number of women presenting with APH (124), 75 had preterm delivery (60.5%). Out of 124 cases who presented with APH, 112 patients (90.32%) delivered by Caesarean section and the remaining 12 (9.68%) delivered vaginally. In the present study, there were no mortalities. Thirty six percent were complicated by PPH. Out of total number of women presenting with APH (124), 92 required blood and blood products transfusion (75%). For control of PPH, other operative interventions such as vessel ligation, placental bed suturing, packing of lower uterine segment were used. Caesarean hysterectomy was done in 4 cases (3%) for intractable haemorrhage.

### Fetal outcome

In this study, out of 124 women presenting with APH, 80 (65%) had preterm deliveries, 50 babies (40%) were low birth weight (below 2 kg) and 39 (31%) of babies were preterm with low birth weight. There were 27 deaths (21%), out of which 5 (4%) were macerated stillbirth and 8 (6%) were fresh stillbirth and 14 (11%) were neonatal deaths. 17 babies (16%) developed birth asphyxia. Out of 124 newborn babies, 54 (44%) required neonatal intensive care unit admission due to prematurity, Low birth weight and respiratory distress (birth asphyxia). Results are shown in following charts and diagrams (Tables 1–5) (Figure 1).

**Table 1** Incidence of APH

Total no. of cases of APH	124
Placenta Previa	79
Abruptio Placentae	45
Undetermined	0
Total no of Deliveries in 2 yrs	9452
Incidence of APH	1.31%
Incidence of Placenta. Previa	0.84%
Incidence of Abruptio. Placentae	0.48%

**Table 2** Demographic parameters of women

Parameters	Number	Percentage
Age	<20 yrs	10 8%
	21-25 yrs	38 31%
	26-30 yrs	48 39%
	>30 yrs	28 23%
Parity	Primigravida	35 28%
	Multigravida	89 72%
Associated Risk Factors	PIH (in Abruptio)	33/45 73%
	Scarred uterus (Caesarean section, curettage)	57 46%

**Table 3** Type of APH

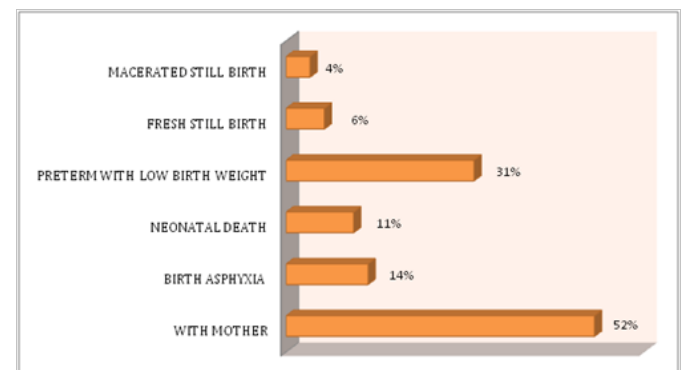
Type of APH	Number	Percentage
Placenta Previa	Type I	13 11%
	Type II	25 20%
	Type III	32 26%
	Type IV	9 7%
	TOTAL	79 64%
Abruptio Placentae	45	36%
Undetermined	0	0

**Table 4** Baby details

Parameter	Number	Percentage
Maturity	<34 wks	33 27%
	34-36 wks	47 38%
	>=37 wks	44 35%
Weight	<2 kg	50 40%
	2-2.49 kg	29 23%
	2.5-3 kg	32 26%
	>3 kg	13 11%

**Table 5** Maternal and perinatal complications

Maternal complications	Number (%)	Perinatal complications	Number (%)
Postpartum Hemorrhage	45 (36%)	Preterm with low birth weight	39 (31%)
Caesarean	112 (90%)	Birth asphyxia	17 (16%)
Blood Transfusion	92 (75%)	Macerated still birth	5 (4%)
Peripartum Hysterectomy	4 (3%)	Fresh still birth	8 (6%)
CCU Admission	8 (6.45%)	Neonatal Deaths	14 (11%)
Death	0	Neonatal care unit admissions	54 (44%)



**Figure 1** Perinatal outcome in antepartum haemorrhage.

## Discussion

The incidence of APH reported from this study is 1.311%, while it is quoted to be 2-5%, 2.01% and 2.53% in other studies from other parts of the world. The incidence observed at Siriraj Hospital, Thailand in 1985 was found to be 0.6%<sup>6</sup> while Arora et al.<sup>7</sup> from India reported the incidence of 2.53%.

Mean age of patients presented with APH in this study is 26-30 years which is similar to the result reported by Das et al.<sup>8</sup> Abbasi et al.<sup>9</sup> also reported the mean age 30 years in a study from tertiary care hospital in Sindh.<sup>9</sup> Incidence of APH is more in multigravida (72%) than in primigravida (28%) in our study. Other studies such as Gillium et al.<sup>10</sup> and Clark et al.<sup>11</sup> have also reported high incidence of APH in multipara which was about 5-8 times higher than primigravida thus confirming the role of endometrial damage caused by repeated childbirth, a risk factor for uteroplacental bleeding in pregnancy. Scarring of uterus due to previous uterine surgery stands out as a one of the major etiological factors for APH, more specifically placenta previa. In the present study, 46% (57/124) cases presented with APH had history of previous uterine surgery in the form of caesarean section, myomectomy, curettage (61% Caesarean section (35/57), 52% (30/57) MTPs & check curettage following abortion). In the present study, 33 out of 45 (73%) cases were associated with pregnancy induced hypertension suggesting it is one of the major risk factors for abruption resulting in APH. This is comparable to the study of Bryan et al.<sup>12</sup> which suggested that Pre-eclampsia is an etiological factor in 80% cases of placental abruption.

The incidence of caesarean section in present study is 90%. The incidence of caesarean section in placenta previa group is 100% similar to the study done by Khouri JA & Sultan MG.<sup>13</sup> The incidence of caesarean in the abruption placenta group in the present study is 73% while that reported by Hurd et al.<sup>14</sup> from the UK and the study reported by Rochelle et al.<sup>15</sup> at Washington State were 50% & 37.9% respectively. In the present study, there was no mortality. Thirty six percent of these cases were complicated by PPH. The commonest cause of PPH was uterine atony followed by coagulation failure. Crane et al.<sup>16</sup> reported the incidence of PPH in APH to be 19%.<sup>16</sup> In this study 75% of patients required blood transfusion. Brenner et al.<sup>17</sup> and William<sup>18</sup> reported the incidence of blood transfusion as 36% and 52.4% respectively. The very high rates of blood transfusion in the present study might be due to the reason that most of the patients were already anaemic at the time of admission. Four patients (4%) required caesarean hysterectomy and 8 patients (6.45%) required CCU admission. Sixty five per cent of women with APH had preterm delivery in the study, this study is consistent with those of Silver et al.<sup>19</sup> and Cotton et al.<sup>20</sup> who reported an association of prematurity with APH of 71% and 77.5% respectively. Forty per cent of babies were low birth weight while other authors such as Arora et al.<sup>7</sup> and Khosla et al.<sup>21</sup> reported 77% and 66% low birth weight respectively. Perinatal mortality was 21% (19/91) in the present study (24.44% in placenta previa and 19.23% in abruption placenta group) while Arora et al.<sup>7</sup> and Khosla et al.<sup>21</sup> reported very higher perinatal mortality 61.5% and 53.5% respectively. In comparison, the incidence reported by Robbins et al.<sup>22</sup> 18.44%. This difference may be due to advanced neonatal intensive care facility in the present institute.

## Conclusion

In conclusion, there was very high maternal morbidity with increased rates of anaemia, postpartum haemorrhage, blood and blood

products transfusion, caesarean section rates, preterm deliveries and prolonged post-operative stay. Similarly perinatal morbidity was high including preterm deliveries including low birth weight, birth asphyxia leading to NICU admission for variable periods. Better antenatal services, increased awareness, improved transportation; improved nutritional status can help to address some of the complications associated with antepartum haemorrhage.

## Acknowledgments

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## Conflicts of interest

The authors declare there is no conflict of interests.

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