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A study of maternal and fetal outcome in Antepartum haemorrhage

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Abstract

Antepartum haemorrhage (APH) has always been one of the most feared complications in obstetrics. Antepartum haemorrhage is till a grave obstetric emergency contributing to a significant amount of maternal and perinatal morbidity and mortality in our country. Haemorrhage was a direct cause of maternal death in about 30% of cases. APH complicates about 2-5% of all the pregnancies with incidence of placenta praevia (PP) about 0.33% to 0.55% and incidence of abruptio placenta (AP) about 0.5-1%. The maternal complications in patients with APH are malpresentations, premature labour, postpartum haemorrhage (PPH), sepsis, shock and retained placenta.

Aim of the study

1. To study the prevalence of antepartum haemorrhage at tertiary care hospital.
2. To assess the importance of early diagnosis and treatment.
3. To study the maternal and fetal outcome in antepartum haemorrhage.
4. To study the associated risk factors contributing to maternal and fetal morbidity and mortality.

Methodology: The study was conducted in Govt. RSRM Lying in Hospital, Chennai during the period of September 2016 to September 2017 after getting approval from the Institutional Ethical Committee. 75 patients who presented at emergency OPD with APH were included in the study.

RESULTS: In the present study it was observed that the incidence of APH was more common in multipara (64%) than in nullipara. The incidence of PP was 5 times higher in multipara than primipara. Chakraborty *et al.* reported that prevalence of APH was higher among multigravidas. Results of present study are consistent with study of Cotton *et al.* who found that 83.2% of their patients with PP were multiparous and 16.78% were nulliparous. Crenshaw *et al.* reported that 10% patients with PP were primi gravida. Ananth *et al.* showed that risk of placental abruption increased with high parity.

Conclusion: All women with APH heavier than spotting and women with on-going bleeding should be recommended hospital stay atleast until the bleeding as stopped.

The pregnancy should receive consultant-led care following APH from placental abruption or unexplained APH, and serial ultrasounds for the monitoring of fetal growth are recommended.

Keywords: Maternal, fetal outcome & antepartum haemorrhage

Introduction

Antepartum haemorrhage (APH) has always been one of the most feared complications in obstetrics. Antepartum haemorrhage is till a grave obstetric emergency contributing to a significant amount of maternal and perinatal morbidity and mortality in our country. Haemorrhage was a direct cause of maternal death in about 30% of cases. APH complicates about 2-5% of all the pregnancies with incidence of placenta praevia (PP) about 0.33% to 0.55% and incidence of abruptio placenta (AP) about 0.5-1%. The maternal complications in patients with APH are malpresentations, premature labour, postpartum haemorrhage (PPH), sepsis, shock and retained placenta. Various fetal complications are preterm baby, low birth weight, intrauterine death, congenital malformation and birth asphyxia. In developing countries, widespread pre-existing anaemia, difficulties with transport, restricted medical facilities, decreased awareness on part of patients are responsible for high MMR. Although APH cannot be prevented but maternal and perinatal morbidity and mortality associated with APH can be reduced significantly by aggressive expectant management.

Presently increase in use of ultrasound for placental localisation and to diagnose abruption placenta, improved obstetrical and anaesthetic facilities, increase in use of blood and its products to correct anaemia and advanced neonatal care facilities to make increased chances of survival of a preterm infant, all totally have played important role in decreasing perinatal as well as maternal morbidity and mortality.

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Antepartum haemorrhage is defined as any bleeding from or into the genital tract after 28 weeks of gestation and before the period of viability. Antepartum haemorrhage quantified as

- Minor haemorrhage: blood loss < 50 ml
- Major haemorrhage: blood loss 50-1000 ml
- Massive haemorrhage: blood loss > 1000 ml.

Causes of antepartum haemorrhage include placenta praevia, placental abruption, vasa praevia, rupture of marginal sinus, local lesions in the vulva, vagina or cervix and unclassified. Obstetrical haemorrhage along with hypertension and infections as one of the infamous triad of causes of maternal deaths in both developed and developing countries. Prompt diagnosis, resuscitation and management are essential to save the mother and fetus.

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.

Aim of the study

1. To study the prevalence of antepartum haemorrhage at tertiary care hospital.
2. To assess the importance of early diagnosis and treatment.
3. To study the maternal and fetal outcome in antepartum haemorrhage.
4. To study the associated risk factors contributing to maternal and fetal morbidity and mortality.

Materials and Methods

Study design

Prospective study

Methodology

The study was conducted in Govt. RSRM Lying in Hospital, Chennai during the period of September 2016 to September 2017 after getting approval from the Institutional Ethical Committee. 75 patients who presented at emergency OPD with APH were included in the study.

Inclusion criteria

- All cases of APH with gestational age > 28 weeks.

Exclusion criteria

- Any antenatal cases of gestational age < 28 weeks with bleeding PV
- Patient suffering from any other bleeding disorder
- Bleeding from a source other than uterus.

Women who fulfilled the above criteria were included in the study. Informed consent was obtained from the patient and family members. On admission, detailed history of the patient regarding age, address, socio-economic status, history regarding her previous antenatal check-ups was obtained. General physical examination was done to assess both maternal and fetal condition. Abdominal examination, per speculum and per vaginum examination (when required) was done. The gestational age of the patient was confirmed with her dates, first trimester ultrasound and a basic obstetric ultrasound was performed to confirm the fetal growth parameters, placental position and amniotic fluid index.

All patients presenting with APH were initially investigated and

managed as outline below, but subsequent management was done according to the suspected cause, severity and type of bleeding and the gestational age of the pregnancy.

Results

Table 1: Comparison of live status of the babies between AP & PP patients

Alive / dead born * Type of APH					
		Type of APH			Total
		Abruption	Placenta		
Alive / dead born	Alive	Count	30	33	63
		% within Type of APH	71.4%	100.0%	84.0%
	Dead born	Count	4	0	4
		% within Type of APH	9.5%	0.0%	5.3%
	IUD	Count	7	0	7
		% within Type of APH	16.7%	0.0%	9.3%
	Twin Dead born	Count	1	0	1
		% within Type of APH	2.4%	0.0%	1.3%
Total		Count	42	33	75
		% within Type of APH	100.0%	100.0%	100.0%

In our study, Chi square=11.22 and P=0.011, which is statistically significant. All patients (100%) belonging to PP group delivered alive babies. All still born babies were delivered by patients belonging to AP group.

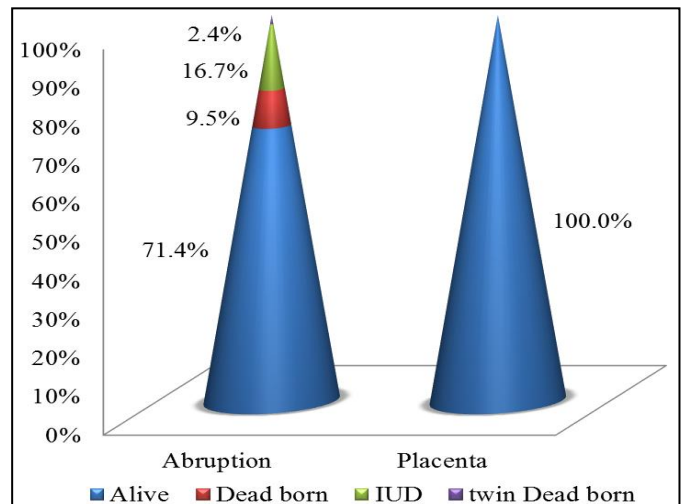


Fig 1: Mortality of baby

Table 2: Comparison of incidence of preterm babies between ap & pp patients

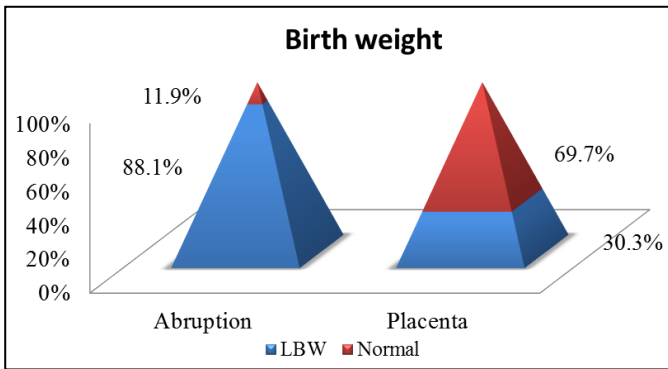
Crosstab					
Term / Preterm * Type of APH					
		Type of APH		Total	
		Abruption	Placenta		
Term / Preterm	Preterm	Count	29	5	34
		% within Type of APH	69.0%	15.2%	45.3%
	Term	Count	13	28	41
		% within Type of APH	31.0%	84.8%	54.7%
Total		Count	42	33	75
		% within Type of APH	100.0%	100.0%	100.0%

Chi square= 21.61 P= 0.001. From this we infer that statistical significance exists between the Abruption and placenta APH type with respect to term and pre term. In Abruption, there is a 69% Preterm prevalence were there.

Table 3: Comparison of incidence of low birth weight between neonates of ap & pp patients

Crosstab					
		Type of APH		Total	
		Abruption	Placenta		
Birth Weight	LBW	Count	37	10	47
		% within Type of APH	88.1%	30.3%	62.7%
	Normal	Count	5	23	28
		% within Type of APH	11.9%	69.7%	37.3%
Total		Count	42	33	75
		% within Type of APH	100.0%	100.0%	100.0%

Chi square= 26.382 P= 0.001. From this we infer that statistical significance exists between the Abruptio and placenta APH type with respect to Normal and Low birth weight babies. In Abruptio, there is a 88.1% Low birth weight babies prevalence were there.

**Fig 2:** Comparison of incidence of low birth weight between neonates of ap & pp patients

Incidence of low birth weight were found to be more common in babies delivered by patients belonging to the group of abruptio placenta than in other group. Neonatal morbidity is more common in infants delivered by patients belonging to the group of abruptio placenta.

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.

In the present study incidence of various causes of APH was noted. The causes were determined clinically in antenatal period and during the delivery. Incidence of abruptio placentae was 56%, PP was 44%. However, the incidence of PP is lower in western literature. Taylor *et al.* observed higher incidence of PP in women of Asian origin.

To study the effect of antenatal care on maternal and fetal outcome in Abruptio placentae, patients were divided into booked and unbooked. Patient without a single ANC visit was labelled as unbooked and patients who had a one or more ANC checkups in our hospital were labelled as booked. In present study 93.3 % patients were booked as compared to 6.7% patients who were unbooked. This study shows that antenatal care has gained importance, still APH cannot be reliably predicted.

Incidence of APH was found to be more common in patients of low education status. 39% of the cases presented at our emergency OPD with APH at gestational age of about 37-38 weeks. Increasing age has been implicated as a predisposing factor in both PP and Abruptio placentae. In the present study mean age of patients of APH was 21- 29 years. Pedowitz *et al.*

[12] and Das *et al.* [13] have also reported maximum number of cases in the same age group. Ananth *et al.* [14] found increased incidence of placenta praevia with advancing age. William *et al.* [15] also reported increased risk of AP with advancing age.

In the present study it was observed that the incidence of APH was more common in multipara (64%) than in nullipara. The incidence of PP was 5 times higher in multipara than primipara. Chakraborty *et al.* [8] reported that prevalence of APH was higher among multigravidas. Results of present study are consistent with study of Cotton *et al.* [16] who found that 83.2% of their patients with PP were multiparous and 16.78% were nulliparous. Crenshaw *et al.* [17] reported that 10% patients with PP were primi gravida. Ananth *et al.* [14] showed that risk of placental abruption increased with high parity.

FHS (fetal heart sound) indicates fetal well-being. Absence of FHS or evidence of fetal distress was important in gauging the condition of fetus and the obstetric management of patient partially depended on this. In present study with APH, especially in abruptio placenta, evidence of still birth was noted in 5% cases. In 9% cases fetal heart sound was absent at the time of admission. This was found to be statistically significant as compared to placenta praevia group in which all cases had normal FHS at admission. The results of the study are similar to that of Chakraborty *et al.* [8] who reported that normal FHS was present in 66% of all patients of APH. In their series 72.56% of PP patients and 82.7% of UH patients had normal FHS. FHS was absent in 33.33% of AP patients. In their study evidence of fetal distress was present in 26.08% patients with AP.

In present study 38% cases of APH had a history of previous LSCS and abortions. H/O prior LSCS was found in 40 cases of PP patients as compared to 3 cases of AP. This is comparable to study of Gilliam *et al.* [19] and Taylor *et al.* [9] who found that 20% cases and 15% cases of PP respectively in their studies had a history of previous caesarean section.

The present study showed that among cases of placenta praevia, 73% cases had history of previous LSCS, 18% cases had history of both previous LSCS and abortions, 9% cases had history of abortions, which is statistically significant compared to abruptio placenta where only 3 cases had history of previous LSCS and abortions. Hibbard *et al.* [20] reported an increased incidence of AP in woman with history of previous abortion.

In present study 56% patients with APH had associated risk factors. 19 % of patient with abruptio placenta presented with severe pre-eclampsia, 6% with gestational hypertension and 5% with hypothyroid. Hibbard *et al.* [20] found hypertensive disorders of pregnancy complicating 7.4% patients with APH. Rai *et al.* [10] found 4.4% incidence of hypertensive disorders of pregnancy in APH patients. 1 cases died because of DIC. 2 cases of placenta praevia presented with gestational diabetes mellitus. Many patients needed blood and blood products transfusion to correct anaemia, on-going blood loss and to correct DIC. Among abruptio-placenta patients, 76.2% patients needed blood transfusion. Among placenta praevia patients, 69.7% patients

needed transfusion.

In our present study, 87% cases of APH in our study was delivered by caesarean section. Early and timely caesarean section improves perinatal salvage in patients with abruption placentae. 30% cases of placenta praevia developed haemorrhage intra-operatively, of which bilateral uterine artery ligation was done in 24% cases, while 6% cases ended up with hysterectomy. Among 6% cases, 1 case presented with placenta accreta. Pedowitz *et al.* [12], Cotton *et al.* [16] and McShane *et al.* [23] reported the incidence of placenta accreta as 4.4%, 4% & 6.32% respectively. In abruption placenta group couvellaire uterus was seen in 2 (3.6%) cases. Rai *et al.* [10] reported couvellaire uterus in 10.5% of APH patients in their study.

One maternal death occurred in present study. Patient had grade III Abruption placenta & died due to renal failure. Gorodeski *et al.* [24] reported maternal mortality of 0.46% in APH while Pedowitz *et al.* [12] reported it as 0.9%. Cotton *et al.* 16 found no mortality in cases of PP in their study.

One of the major aspects of this study was to study the perinatal outcome in various groups of APH. Neonatal jaundice was the most common complication in APH, followed by prematurity and birth asphyxia. 8% neonates had neonatal jaundice. Prematurity was commonly seen in abruption placentae. 45% neonates were premature. 6 neonates died of respiratory distress syndrome. 62% babies of APH were low birth weight.

Conclusion

APH cannot reliably be predicted. APH is associated with maternal and perinatal morbidity and mortality. It is a good practice to avoid vaginal examination and to advise to avoid penetrative sexual intercourse if placenta praevia is diagnosed. All women presenting with APH should be assessed to establish whether urgent intervention is necessary to manage maternal or fetal compromise. Multi-disciplinary approach and senior input is necessary in making decision about timing and mode of delivery. Investigations should be performed to assess the extend and physiological consequences of the APH. Ultrasound can be used for the diagnosis of placenta praevia, but ultrasound scan does not exclude abruption. Placental abruption is a clinical diagnosis and no sensitive or reliable diagnostic tests are available. In women presenting with APH, an assessment of the fetal heart rate should be performed, usually with a cardiotocograph (CTG) once the mother is stable or resuscitation has commenced, in order to make a decision on the mode of delivery. Various tests to differentiate between fetal and maternal blood have been described if vasa praevia is suspected, but are often not applicable in clinical practice.

All women with APH heavier than spotting and women with on-going bleeding should be recommended hospital stay at least until the bleeding as stopped.

The pregnancy should receive consultant-led care following APH from placental abruption or unexplained APH, and serial ultrasounds for the monitoring of fetal growth are recommended.

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