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Original Research Article

Study of antepartum hemorrhage and its maternal and perinatal outcome at a tertiary care hospital

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ABSTRACT

Background: Antepartum haemorrhages are defined as bleeding from or into the genital tract after the period of viability untill delivery of the fetus. APH complicates 3-5% of pregnancies and is a leading cause of perinatal and maternal mortality worldwide. Objective of this study is to quantitate maternal morbidity, mortality and perinatal outcome in patients with APH at a tertiary care hospital.
Methods: A retrospective observational study was carried out in the department of obstetrics and gynecology, Smt. Kashibai Navale medical college and general hospital, Pune. Patient information was obtained from the delivery records of 2018, 2019 and 2020. Patients presenting after the gestational age of 28 weeks with antepartum haemorrhage were included in the study.
Results: Out of 100 cases of APH, abruptio placenta contributes to 60%, placenta previa to 37% and 3 cases were due to unknown cause. Overall maternal mortality was 3% and perinatal mortality was 23% in abruptio placentas compared to 13% in cases with placenta previa. Main cause of perinatal mortality was prematurity69%.
Conclusions: Antepartum haemorrhage is one of the leading cause of perinatal mortality and morbidity. These cases should be deliverd at a centre with transfusion facility, NICU facility and by the obstetrician skilled in controlling intraoperative haemorrhage by stepwise devascularising sutures. Timely decision of uterine tamponade can also save few ceaserean hysterectomies.

Keywords: APH, Abruptio placentae, Placenta previa

INTRODUCTION

Antepartum haemorrhage (APH) is defined as bleeding from or into the genital tract after the period of viability until delivery of fetus andremains a major cause of perinatal mortality and maternal morbidity in the developed world. Obstetric haemorrhage accounts for 22-25% of maternal mortality and amongst these antepartum haemorrhage is the most common cause of morbidity and mortality accounting for half of these deaths.[1] APH complicates 3-5% of pregnancies and is a leading cause of perinatal and maternal mortality worldwide.[2]

Thirty percent of maternal deaths are caused by antepartum haemorrhage of which 50% are associated with avoidable factors.[3]

The primary causes of APH includes: abruptio placenta (1 in 100 pregnancies)-40%, placenta previa (1 in 200 pregnancies)-20%, unclassified-35% and lower genital tract lesions-5%.[4] Abruptio placenta is the premature separation of normally situated placenta from the uterine wall. Bleeding into the decidua basalis leads to placental separation. Hematoma formation may further separate the placenta from uterine wall and compromise foetal blood

supply. The degree of separation or abruption of placenta will determine the effect on foetus.

Risk factors for placental abruption include advanced maternal age, multiparity, low body mass index (BMI), abruption in a previous pregnancy, pre-eclampsia, polyhydramnios, intrauterine infection, premature rupture of membranes, abdominal trauma, smoking, drug misuse (cocaine and amphetamines), pregnancy following assisted reproductive techniques and maternal thrombophilias.[5]

Placenta praevia is defined as a placenta that lies wholly or partly within the lower uterine segment. The prevalence of clinically significant placenta praevia is estimated to be approximately 4 or 5 per 1000 pregnancies at term. Classified as: placenta previa; the internal OS is covered partially or completely by placenta. In the past, these were further classified as either total or partial previa the cervical OS, low-lying placenta; implantation in the lower uterine segment is such that the placental edge does not cover the internal OS but lies within a 2-cm wide perimeter around the OS. A previously used term, marginal previa, described a placenta that was at the edge of the internal OS but did not overlie it.

A number of studies have established its association with, advanced maternal age (>40 years) multiparity, previous placenta previa, deficient endometrium due to presence or history ofuterine scar (previous caesarean section, pregnancy termination followed by curettage), endometritis, manual removal of placenta, or submucous fibroid, multiple pregnancy, smoking.[6]

Objectives

Objective of this study was to identify factors associated with APH, and to quantitate maternal morbidity, mortality and perinatal outcome in patients with APH at Smt. Kashibai Navle medical college, Narhe, Pune.

METHODS

A retrospective observational study was carried out at Smt. Kashibai Navle medical college and hospital Narhe, Pune. Patient information was obtained from the delivery records of the year 2018 to 2020. Details of the Patients presenting at gestational age of 28 weeks and above with antepartum haemorrhage were collected and analysed. 100 patients after 28 weeks gestation with bleeding per vagina were included in the study. Diagnosis was made on the basis of history, clinical examination and ultrasound findings and cases were grouped as; placenta previa (PP), abruptio placenta (AP) or other causes. Controlling intraoperative haemorrhage in APH is the most challenging part for any obstetrician. At our centre we have used uterine artery ligation, stepwise devascularization which includes ligation of uterine-ovarian anastomosis and internal iliac artery ligation. Few cases have been managed by uterine tamponade using condom catheter.

RESULTS

Out of 9097 total deliveries in three years (2018, 2019, 2020) there were 100 patients with APH which included 60% cases of abruptio placenta, 37% cases of placenta previa and 3% with unknown cause. Majority of patients were in the age group of 26-30 years (Table 1). 62% of APH patients were unbooked (60 % cases of abruptio placenta and 64% cases of placenta previa) (Table 2). Rural background was predominant with 92% of APH patients having primary residence in rural area. Majority of the APH patients belonged to class 4 and 5 of Modified Kuppuswamy Prasad's classification. 65% patients of abruptio placenta were primigravida while Placenta previa was more common in multigravida with 81% (30 out of 37) (Table 3).

Table 1: Age distribution in APH.

Age (years)	Abruptio placenta (N=60) frequency (%)	Placenta previa (N=37) frequency (%)	Other
<20	0 (0)	0 (0)	0
21 -25	10 (16)	6 (16)	1
26-30	33 (55)	14 (37)	1
31-35	15 (25)	17 ((45)	1
36-40	2 (3.3)	0 (0)	0
>40	0 (0)	0 (0)	0

Table 2: Booked/unbooked cases with APH.

Variables	Abruptio placenta (N=60) frequency (%)	Placenta previa (N=37) frequency (%)	Other
Booked	24 (40)	13 (35)	1
Unbooked	36 (60)	24 (64)	2

Table 3: Relation of gravidity and APH.

Variables	Abruptio placenta (N=60) frequency (%)	Placenta previa (N=37) frequency (%)	Other
Primigravida	39 (65)	7 (19)	1
2nd Gravida	12 (20)	9 (24)	1
3rd Gravida	7 (11)	17 (45)	1
>3 Gravida	2 (3.3)	4 (11)	0

Gestational age at termination was less than 37 weeks in 69% cases of APH. 17 % pregnancies were terminated between 28 to 32 weeks, 52 % at 32.1 weeks to 36.6

weeks and only 31% after 37 weeks (Table 4). In abruptio placenta 68% patients were associated with PIH while, 20% with eclampsia (12 out of 41 cases). 3 patients of abruptio placenta and 2 patients of placenta previa had associated twin pregnancy.73% cases of placenta previa had associated malpresentation (Table 5). 87% cases of APH were delivered by LSCS while vaginal delivery was done in 13% of cases. All patients with placenta previa had LSCS while 80% cases of Abruptio placentae had LSCS and 20% had vaginal delivery (Table 6).

Table 4: Distribution of gestational age at termination of pregnancy.

Gest. age (weeks)	Abruptio placenta (N=60) frequency (%)	Placenta previa (N=37) frequency (%)	Other
28-32	11 (18)	6 (16)	0
32+1 to 36+6	37 (62)	15 (41)	0
>37	12 (20)	16 (43)	3

Table 5: Associated risk factors with APH.

Variables	Abruptio placenta (N=60) frequency (%)	Placenta previa (N=37) frequency (%)
PIH	41 (68)	2 (5.4)
Eclampsia	12 (20)	0 (0)
Oligohydramnios	0 (0)	6 (16)
Malpresentation	7 (11)	27 (72)
Multifetal gestation	3 (5)	2 (5.4)
PIH	41 (68)	2 (5.4)

Table 6: Mode of delivery.

Variables	Abruptio placenta (N=60) frequency (%)	Placenta previa (N=37) frequency (%)	Other (N=3)
LSCS	48 (80)	37 (100)	2
Vaginal delivery	12 (20)	0 (0)	1

Haemorrhage was a major intrapartum complication involving 27% cases of APH with 26.6% in abruptio placenta and 29.7% cases of placenta previa. 3 cases of placenta previa presented with placenta accreta spectrum all of which were managed by obstetric hysterectomy (Table 7).

Blood transfusion was required intraoperatively in 88% of total APH patients with 85% of abruptio placenta cases and all cases of placenta previa. Only uterine artery ligation could control the bleeding in 21%cases whereas in 44% cases other hemostatic sutures had to be applied to control the bleeding. Combinations of different methods were used in many patients. Uterine tamponade was used in 11% patients of APH were bleeding continued inspite of above methods However, caesarean hysterectomy was needed in 5 patients of APH of which3 had placenta accreta spectrum and 2 cases had uncontrolled atonic PPH (Table 8).

Table 7: Intrapartum complication associated with APH.

Variables	Abruptio placenta (N=60) frequency (%)	Placenta previa (N=37) frequency (%)
Intrapartum hemorrhage	16 (26.6)	11 (29.7)
Placenta accreta spectrum	0 (0)	3 (8.1)
Heamorrhagic shock	1 (1.66)	3 (8.1)

Table 8: Intra-operative intervention.

Variables	Abruptio placenta (N=60) frequency (%)	Placenta previa (N=37) frequency (%)
Blood transfusions (1 or more)	51 (85)	37 (100)
Uterine artery ligation	10 (16)	1(29)
Stepwise devascularisation sutures	29 (17)	1(40)
Uterine balloon tamponade	5 (8.3)	6 (16)
Obstetric hysterectomy	2 (3.3)	3 (8)

Post operatively, 19% patients of APH had secondary PPH, while 39% required blood transfusion in postop period (36.6% of abruptio placenta and 46% of placenta previa). 44% required ICU admission . 3% landed in septicemia while 2 patients had DIC and mortality. Systemic complications like ARF were seen in 5% cases, all of which were of abruptio placenta. Neonatal outcome overall was poor with 14% APH patients had IUD. 53% of newborns needed NICU admission. 23% perinatal mortality was seen in babies of abruptio placentae as compared to 13% of placenta praevia (Table 10). Main causes of perinatal mortality was prematurity. Analysis of maternal outcome revealed overall maternal mortality in

APH was 3% (3 out of 100) out of which 2 cases had DIC and 1 case had septicaemia.

Table 9: Post operative complications in APH.

Variables	Abruptio placenta frequency (%)	Placenta previa frequency (%)
Blood transfusions	22 (36)	17 (46)
PPH	8 (13)	11 (29)
Sepsis	2 (3.3)	1 (2.7)
Need for ICU	32 (53)	12 (32)
Wound complications	5 (8.3)	6 (16)
ARF	5 (8.3)	0 (0)
DIC	2 (3.3)	0 (0)

Table 10: Neonatal outcome.

Variables	Abruptio placenta frequency (%)	Placenta previa frequency (%)
IUD	12 (20)	2 (5.4)
Need for NICU	32 (53.3)	21(56)
Perinatal mortality	14 (23)	5 (13)

DISCUSSION

Incidence of APH in our study is 1.09% which is similar to study by Takai et al 1.2%.[7] The leading cause of antepartum hemorrhage in this study was found to be abruptio placenta followed by placenta previa as opposed to findings in Southwestern Nigeria.[8] In current study the incidence of APH was highest 48% in the age group 26 30 years followed by 33% in the age group of 30-35years which is concordant with the study conducted by Adekanle et al in which 40% APH patients were between 25-29 years while Priyanka et al revealed that 61% of APH cases were aged 26 -30 years.[9-11]

In this study 62% cases of APH were unbooked and reported in emergency with bleeding per vaginum or labour pains. This was similar to previous studies done by Maurya et al which reports 62% unbooked cases.[12] The incidence of caesarean section in the present study is 87%. The incidence of caesarean section in placenta previa group is 100% similar to the study done by Khouri and Sultan.[11,12] The incidence of caesarean in the abruption placentae group is 80% while that reported by Hurd et al from the UK and the study reported by Rochelle et al at Washington state were 50% and 37.9% respectively.[13.14]

Hypertension was seen in 55 cases of APH of which53 cases had abruption. This was consistent with the studies conducted by Sarwar et al and Bhandiwad et al.[16,15] In present study 14% APH cases had IUDs, which was consistent with the study conducted by Samal et al.[17]

Total 88% of APH cases received blood transfusions Intra operatively (85% of abruptio placenta and all cases of placenta previa) while 39% needed blood transfusions postoperatively also. Caesarean hysterectomy was performed in 5% cases of APH. 8% (N=3) cases with placenta previa had caesarean hysterectomy of which all 3 had placenta accreta spectrum ,which is similar to incidence of in SOGC clinical practice guidelines and 5% in study by Nasreen et al.[18]

Perinatal mortality was 19% in the present study (23.3% in abruptio placenta and 13 % in placenta previa group) while Arora et al and Khosla et al reported very higher perinatal mortality 61.5% and 53.5% respectively.[19,20] This difference may be due to advanced neonatal intensive care facility in the present institute. Maternal mortality in our study was 3%, which is similar to study by Maurya et al.[14]

CONCLUSION

Antepartum haemorrhage is a leading cause of perinatal morbidity and mortality. Authors found that common risk factors for APH were hypertension and multiparty. Early diagnoses, timely referral, transfusion facilities and, surgical skill in controlling intraoperative heamorr-hagecan aid in decreasing maternal morbidity and mortality. Good NICU set up and multidisciplinary approach can improve maternal and perinatal outcome in APH.

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