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STUDY OF CLINICAL PROFILE ,MATERNAL AND PERINATAL OUTCOMES IN THIRD TRIMESTER HAEMORRHAGE

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ABSTRACT Third Trimester Haemorrhage (TTH), an obstetrical emergency, has a higher maternal and perinatal mortality rate in India as compared to the developed nations. An observational study was done to understand the clinical profile, foetal-maternal outcomes of TTH along with its predictors of adverse fetomaternal outcomes. Placenta praevia was found to be the major cause of TTH with incidence increasing with age and parity. History of previous LSCS and abortion increased the incidence of placenta praevia and abruption was significantly associated with hypertension and pain abdomen.TTH was associated with increased third stage of labour and postpartum complications along with increased incidence of prematurity and low birth weight. Besides antenatal registration, early detection and timely referral, active management at centres equipped with good NICU facility besides 24 hours blood bank and OT facilities, is required for good outcome.

KEYWORDS : Third Trimester haemorrhage, Antepartum haemorrhage, Placenta Praevia, Abruptio placentae

INTRODUCTION

Third trimester haemorrhage (TTH), defined as bleeding from the genital tract after 28 weeks of gestation until delivery, complicates 2-5% of all pregnancies. It is an obstetrical emergency responsible for significant maternal and perinatal morbidity and mortality.[1]The major causes of TTH are placenta praevia and abruptio placentae accounting for about one third of the third trimester haemorrhage each. Other causes include vasa praevia, marginal sinus bleeding, heavy show, cervicitis, tumors.[1]

Third trimester haemorrhage subjects the antenatal women to complications like malpresentation, premature labour, postpartum haemorrhage ,retained placenta, sepsis, shock and even death. Foetal complications include prematurity, low birth weight, birth asphyxia and perinatal death. Maternal mortality due to APH (Antepartum Haemorrhage) is 2.54/1000 live births in India as compared to 6/10000 live births in developed countries.[2] Similarly, the perinatal mortality is less than 10/1000 total births in developed countries as compared to 60/1000 total births in India.[2] This disparity is because of pre existing anaemia, difficulties in transportation, restricted medical facilities and decreased awareness on the part of patients in developing countries as compared to the developed ones. Although APH cannot be prevented, the maternal and perinatal morbidity and mortality associated with it can be significantly reduced by early diagnosis and appropriate management expectant or active, depending upon the clinical condition. Systematic information about clinical profile and foetal-maternal outcomes in TTH is limited and needs to be explored to equip the obstetrician with better knowledge of predictors of outcome so as to improve the maternal and foetal prognosis. It was with these facts in mind that this study was conducted to understand the clinical profile and feto-maternal outcomes in cases of TTH and also to determine the predictors of adverse feto maternal outcomes in these cases

MATERIALS AND METHODS

This was a prospective observational study conducted in the Department of Obstetrics and Gynaecology at Dr Baba Saheb Ambedkar Hospital and Medical College from December 2014 to July2015 after taking approval from the scientific and ethical committee of the institute Pregnant women who were diagnosed to have APH after 28 weeks of gestation were admitted in the hospital and thoroughly evaluated. Women meeting the inclusion and exclusion criteria were enrolled in the study after taking informed consent. Exclusion criteria were pregnant women with multiple pregnancies and those with medical conditions like bleeding disorders. Detailed histories including socio-demographic details along with obstetric, medical and surgical history were recorded followed by complete general, systemic and obstetric examination. Abdominal examination was done to assess the size of uterus, lie, presentation, amount of liquor and foetal heart sound. Gestational age was calculated by last menstrual period and ultrasound. Relevant blood investigations and ultrasound were done. Management of patient was done by expectant or active interference depending on the hemodynamic stability of mother and condition of the foetus i.e. maturity, viability and absence of malformations of the foetus. Patients were followed up till delivery and delivery details and neonatal details were recorded.

STATISTICAL ANALYSIS The data was entered in MS EXCEL spreadsheet and analysis was done using Statistical Package for Social Sciences (SPSS) version 17.0. Categorical variables were presented in number and percentage (%) and continuous variables were presented as mean $\pm$ SD. Regression analysis was performed to know the effect of various factors on complications and p value <0.05 was considered statistically significant.

OBSERVATIONS & RESULT

A total of 50 patients who were admitted with complaints of bleeding per vaginum after 28 weeks of gestation were included in the study. Out of the 50 cases, 23(46%) had placenta praevia,14 (28%) had abruptio placentae and 13 (26%) patients were of unclassified haemorrhage.. The mean age of the patients was27.32 $\pm$4.73 years. Majority of the patients (62%) were registered and 42.0% of patients belonged to class V of socioeconomic status. [Table 1]

Table 1 Socio demographic distribution of patients

Socio demographic profile		Abruptio Placentae	Placenta Praevia	Unclassified Haemorrhage	Total
No.of cases		28%(14)	46%(23)	26%(13)	100%(50)
Booking Status	Registered	50%(7)	78.26(18)	46.15%(6)	62%(31)
	Referred	21.43%(3)	13.04%(3)	7.69%(1)	14%(7)
	Unregistered	28.47%(4)	8.70%(2)	46.15%(6)	24%(12)
Socioeconomic Status	Class I	0%	0%	0%	0%(0)
	Class II	0%	0%	0%	0%(0)
	Class III	14.29%(2)	34.78%(8)	15.38%(2)	24.0%(12)
	Class IV	35.71%(5)	34.78%(8)	30.77%(4)	34.0%(17)
	Class V	50%(7)	30.43%(7)	53.85%(7)	42.0%(21)
Age (in years)	<20	21.43%(3)	13.04%(3)	15.38%(2)	16.0%(8)
	20-25	28.57%(4)	17.39%(4)	23.08%(3)	22.0%(11)
	26-30	21.43%(3)	39.13%(9)	38.46%(5)	34.0%(17)
	31-36	28.57%(4)	30.43%(7)	23.08%(3)	28.0%(14)

72% of the patients were 2nd-4th gravida. Chances of all three types of

TTH increased with increase in parity. Additionally, among the patients with placenta praevia, 39.13% had history of previous LSCS and 21.74% had history of previous abortions as compared to patients of abruptio placentae in whom it was only 0% & 7.14% respectively. [Table 2]

Table 2 Risk Factors distribution

		Abruptio Placentae	Placenta Previa	Unclassified Haemorrhage	Total
Gravida	Primigravida	42.86%(6)	8.70%(2)	30.77%(4)	24.0%(12)
	G2-G4	50.0%(7)	91.30%(21)	61.54%(8)	72.0%(36)
	G5 and Above	7.14%(1)	0.0%(0)	7.69%(1)	4.0%(8)
History of LSCS	Absent	100%(14)	60.87%(14)	69.23%(9)	74.0%(37)
	Present	0.0%(0)	39.13%(9)	30.77%(4)	26.0%(13)
History of abortion	Absent	92.86%(13)	78.26%(18)	84.62%(11)	84.0%(42)
	Present	7.14%(1)	21.74%(5)	15.38%(2)	16.0%(8)

13.04% of patients with Placenta praevia and 21.43% of patients with abruption had their first episode of bleeding before 32 weeks of pregnancy. While maximum cases in placenta praevia (64.29%) and abruptio placentae (52.17%) presented before 37 weeks ,in unclassified haemorrhage maximum (76.92%)presented after 37 weeks ,47.83% of cases of placenta praevia presented within 4 hours of onset of bleeding as compared to 21.43% of cases of abruptio placentae.42.86% cases of abruptio placentae had associated hypertension as compared to only 4.35% cases of placenta praevia and it was statistically significant (p=0.016).Pain in abdomen, tenderness and presence of uterine contractions were also found to be associated significantly with abruptio placenta (p = 0.004,0.005 and 0.029 respectively).Malpresentations were seen with 17.39% patients of placenta praevia,7.14% patients of abruption placentae and 7.69% patients of unclassified haemorrhage. About 78.26% of patients of placenta praevia had normal foetal heart sounds at time of admission while 28.57% of patients of abruptio placentae had absent foetal heart sounds. Majority of patients were moderately anaemic at the time of admission.[Table 3]

Table 3 – Clinical Parameters at the time of admission

	Abruptio Placentae	Placenta Praevia		Unclassified Haemorrhage	Total
Period of Gestation (in weeks)	28-32	21.43%(3)	13.04%(3)	0.0%(0)	12.0%(6)
	32-36	42.86%(6)	39.13%(9)	23.08%(3)	36.0%(18)
	>=37	35.71%(5)	47.83%(11)	76.92%(10)	52.0%(26)
Duration of bleeding (in hours)	0-4	21.43%(3)	47.83%(11)	61.54%(8)	44.0%(22)
	4-8	50.0%(7)	17.39%(4)	15.38%(2)	26.0%(13)
	8-12	28.57%(4)	21.74%(5)	15.38%(2)	22.0%(11)
	>12	0.0%(0)	13.04%(3)	7.69%(1)	8.0%(4)
Clinical Presentation	Hypertension	42.86%(6)	4.35%(1)	30.77%(4)	22.0%(11)
	Pain Abdomen	85.71%(12)	30.43%(7)	84.62%(10)	60.0%(30)
	Tenderness	92.86%(13)	17.39%(4)	76.92%(10)	54.0%(27)
	Contractions	50.0%(7)	13.04%(3)	46.14%(6)	32.0%(16)
Haemoglob in status at visit (gm%)	<5	0.0%(0)	4.35%(1)	0.00%(0)	2.00%(1)
	5-8	7.14%(1)	8.70%(2)	15.38%(2)	10.0%(5)
	8-11	71.43%(10)	69.57%(16)	53.85%(7)	66.0%(33)
	>11	21.43%(3)	17.39%(4)	30.77%(4)	22.0%(11)
Foetal Presentation	Cephalic	92.86%(13)	82.61%(18)	92.31%(12)	88.0%(44)
	Breech	7.14%(1)	13.04%(3)	0.00%(0)	8.0%(4)
	Transverse	0.00%(0)	4.35%(1)	7.69%(1)	4.0%(4)
FHS	Absent	28.57%(4)	13.04%(3)	15.38%(2)	18.0%(9)
	Distress	7.14%(1)	8.70%(2)	7.69%(1)	8.0%(4)
	Good	64.29%(9)	78.26%(18)	76.92%(10)	74.0%(37)

LSCS was mode of delivery in majority of cases in both placenta previa (95.65%) and abruptio placentae (64.28%).But in abruptio placentae all LSCS were emergency while in placenta praevia 21.74% were elective LSCS after initial conservative management. In contrast in unclassified haemorrhage majority of cases i.e. 53.84% had vaginal delivery. . Approximately 30% of patients of TTH required blood transfusions and post partum anaemia was seen in 20% of the patients. Shock was seen in 8.7% of cases of placenta praevia. In 28.57% of patients of abruptio placentae coagulopathy was found.[Table 4]

Table 4 Obstetric Outcome

		Abruptio Placentae	Placenta Praevia	Unclassified Haemorrhage	Total
Mode Of Delivery	Conservative f/b El LSCS	0.0%(0)	21.74%(5)	7.69%(1)	12.0%(6)
	Conservative f/b Em LSCS	7.14%(1)	4.35%(1)	0.0%(0)	4.0%(2)
	Conservative f/b vaginal delivery	0.0%(0)	0.0%(0)	15.38%(2)	4.0%(2)
	Immediate Em LSCS	57.14%(8)	69.57%(16)	38.46%(5)	58.0%(29)
	Immediate Vaginal Delivery	35.71%(5)	4.35%(1)	38.46%(5)	22.0%(11)
Number of Blood Transfusions	0	64.29%(9)	65.22%(15)	84.62%(11)	70.0%(35)
	1	21.43%(3)	17.39%(4)	7.69%(1)	16.0%(8)
	2	7.14%(1)	8.70%(2)	0.0%(0)	6.0%(3)
	3	7.14%(1)	8.70%(2)	7.69%(1)	8.0%(4)
Maternal Outcome & complications	PPH	14.29%(2)	21.74%(5)	15.38%(2)	18.0%(9)
	Post Partum Anaemia	7.14%(1)	30.43%(7)	15.38%(2)	20.0%(10)
	Shock	0.0%(0)	8.70%(2)	0.0%(0)	4.0%(2)
	Febrile Morbidity	14.29%(2)	17.39%(4)	7.69%(1)	14.0%(7)
	Coagulopathy	28.57%(4)	4.35%(1)	7.69%(1)	12.0%(6)
	Puerperal Sepsis	0.0%(0)	8.70%(2)	7.69%(1)	6.0%(3)

Perinatal mortality was 38.46%, 28.57% and 13.04% in unclassified, abruptio placentae and placenta praevia respectively. Still birth was more in abruptio placentae (21.43%) as compared to placenta praevia(13.04%) and unclassified haemorrhage (15.38%). Neonatal death was significantly higher in unclassified haemorrhage (p value 0.049). TTH subjected the babies to various complications like Birth asphyxia(16%), neonatal seizures(6%), IUGR(16%), RDS(8%) and preterm birth(48%). Low Birth Weight was seen in 60% of Third trimester haemorrhage which was statistically significant (p value=0.044). [Table 5]

Table 5 Perinatal Outcome

		Abruptio Placentae	Placenta Previa	Unclassified Haemorrhage	Total
Perinatal Outcome	Still Birth	21.43%(3)	13.04%(3)	15.38%(2)	16%(8)
	Neonatal death	7.14%(1)	0.0%(0)	23.08%(3)	8%(4)
	Total PNMR	28.57%(4)	13.04%(3)	38.46%(5)	24.0%(12)
	Birth Asphyxia	14.29%(2)	8.70%(2)	30.77%(4)	16.0%(8)
	Neonatal Seizure	7.14%(1)	0.0%(0)	15.38%(2)	6.0%(3)
	IUGR	21.43%(3)	13.04%(3)	7.69%(1)	14.0%(7)
	RDS	14.29%(2)	8.70%(2)	0.0%(0)	8.0%(4)
	Pre term Birth	64.29%(9)	52.17%(12)	23.08%(3)	48.0%(24)
	Low Birth weight	71.43%(10)	69.57%(16)	30.77%(4)	60.0%(30)

After performing univariate logistic regression, prior episode of bleeding PV was the only risk factor that was found to be statistically affecting Low Birth weight and prematurity. Application of multivariate logistic regression showed that initial active treatment has come out to be statistically significant risk factor that affected prematurity.

DISCUSSION

Third Trimester haemorrhage complicates approximately 2-5% of all pregnancies. Studying the clinical profile and foetal-maternal outcomes in third trimester haemorrhage is important for better knowledge of predictors of outcome so as to improve the maternal and foetal prognosis.

Study revealed that our hospital had more number of registered patients (62%) as compared to the studies done in other parts of India [3,4,5,6] and it can be explained by the better education level, awareness, knowledge about antenatal care and better availability of medical services in Delhi. The most common age group presenting with TTH was between 26-30 years (34.0%). The incidence of TTH increased with increase in age and with increase in parity of the patients. The ratio of primigravida to multigravida was found to be 1:4

in placenta praevia and 1:2 in abruptio placentae. These findings were consistent with other similar studies [3,5,6,7] Bhandiwad et (2014) observed 77.50% of their cases of 20-29years age group with 45% of their patients primigravida. Placenta praevia(46%) was found to be more common cause of TTH than abruptio placentae(28%) and unclassified haemorrhage (26%).

A strong association was observed between history of prior caesarean section, spontaneous or induced abortion and subsequent development of placenta praevia. The risk increases with number of prior caesarean section. Damage to the endometrial and myometrial uterine lining can predispose to low implantation of the placenta in the uterus. [8,9] It was observed that nearly 48% of the patients had their first episode of bleeding before 37 weeks of pregnancy. Jain et al showed 77.5% of APH in preterm pregnancy and Silver et al noted 71% APH before 37 weeks.[4,11] This is an alarming figure as TTH in preterm pregnancy increases perinatal morbidity and mortality by many folds.44% cases of our study presented within 0-4hours of onset of bleeding. In a study by Arora et al 75% of patients presented after 4 hours of onset of bleeding. This discrepancy can be explained by increased registered patients at our hospital along with better availability of transport by Centralised Accident and trauma Services Ambulance. This highlights the need of better awareness of patients along with better availability of transport and referral facilities as early diagnosis and treatment can improve both maternal and foetal prognosis in cases of TTH. Hypertension (p value = 0.016), pain in abdomen (p = 0.004), tenderness (p <0.005) and contractions (p=0.029) were all found to be significantly associated with abruptio placentae. Malpresentation was more common with placenta praevia(17.39%) than abruptio placentae (7.14%) and unclassified haemorrhage(7.69%).Various other studies also showed incidence of foetal malpresentation between 5.8% to 15% in cases of abruptio placentae and 23% to 28.30% in cases of placenta praevia. This can be explained by the presence of bulk of placenta in lower uterine segment preventing the engagement of foetal head in these conditions. 18% of the cases of TTH in our study presented with absent foetal heart sound which is similar to studies by Bhandiwad et al [7] and Jain et al [4] (17.40% and 22%respectively) while Sarwar et [12] al reported a much higher cases of absent FHS (58.50%) which may be due to 100% unregistered cases in that study. 74% of the cases with TTH in our study showed normal Foetal heart sound (FHS) on presentation as compared to 34.80% to 50% in the above mentioned studies. This may be because of more number of registered cases and early presentation of cases since start of symptoms(<4 hrs).This again underlines the importance of registration, early diagnosis, awareness of women regarding APH and prompt transport and referral facilities in improving foetal prognosis.

34.79% and 35.71% of patients needed blood transfusion in case of placenta previa and abruptio placentae respectively. In the study by Jain et al [4] 87.2% of patients of placenta praevia and 70.6% of patients of abruption required blood transfusion. This highlights the importance of blood bank in the institutes where such cases are being managed. Out of the 23 patients of placenta praevia, 73.91% had emergency LSCS, 21.74% had conservative management followed by elective LSCS and only 4.35% had vaginal delivery. Though a higher percentage (92.85%) required immediate pregnancy termination in case of abruptio placentae, 35.71% of them had successful immediate vaginal delivery. Third stage complications in patients of TTH were postpartum haemorrhage(18.0%),B –Lynch sutures (4.0%),Uterine Artery ligation(4.0%)Placenta accreta(2.0%) and retained placenta (2.0%).While no patients in our study required internal iliac artery ligation or caesarean hysterectomy, other studies have reported not only the use of B lynch sutures and bilateral uterine artery ligation but also bilateral internal iliac artery ligation and caesarean hysterectomy as life saving measures to control postpartum haemorrhage [13-15].Post partum anaemia was seen in 20% of the cases and 2% of patients had developed shock. Other post partum complications like febrile morbidity (14.0%), coagulopathy(4.0%) and puerperal sepsis (6.0%) was found in accordance with other similar studies.[7,8,12]

Only 6.0% of infants required NICU admission and 24.0% of perinatal death was noted in our study as compared to other similar studies reporting 28.79% to 31.0% requiring NICU admissions and 33.04% to 50% perinatal death.[3,4]. The discrepancy can be explained by lesser number of patients(8%) presenting with foetal distress and more number of patients (44%) presenting within 4 hours of onset of bleeding. Incidence of perinatal mortality was highest when APGAR score at 1 min was 1-4.Perinatal mortality was more in cases of abruptio placentae (28.57%) as compared to placenta praevia (13.04%).Perinatal mortality was 100% in babies weighing <1500 gms.

Prior episodes of bleeding per vaginum in TTH was found to be significantly associated with Low birth weight and prematurity and multivariate analysis confirmed initial treatment i.e. active management to be statistically significant risk factor affecting perinatal prognosis.

CONCLUSION

TTH is an obstetrical emergency with maternal complications ranging from PPH to hemodynamic shock to death and foetal complications ranging from low birth weight to prematurity to perinatal death. The incidence of TTH increases with increase in age, parity and decrease in socioeconomic status. Placenta praevia is most common cause of TTH and history of previous LSCS and abortions are associated with increased incidence of placenta praevia. Hypertension, pain abdomen and contractions are more commonly associated with abruptio placentae. Though TTH is not preventable, steps can be taken to decrease the nuance of the condition. Antenatal registration, early detection, timely referral and active management improves both the maternal and foetal prognosis many folds. Additionally, as TTH is associated with low birth weight and prematurity, it is pertinent that centres must be equipped with good NICU facility besides 24 hours blood bank and OT facilities.

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