



## Third Trimester Bleeding: It's Effect on Foetal Outcome -A Study at Tertiary Care Hospital

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### Abstract

**Objective:** To evaluate the foetal morbidity and mortality in relation to various causes of third trimester bleeding at J K Lon hospital, kota (Rajasthan).

**Methods:** 312 pregnant women of third trimester bleeding, coming to OPD were recruited for study after applying inclusion & exclusion criteria in our institute during the period of 1<sup>st</sup> March 2018 to 28<sup>th</sup> February 2019. Their foetal outcome is observed, compiled, analysed and evaluated.

**Results:** Out of the 314 babies delivered (including two twins), 258 were alive at birth while 56 were dead. Thus overall Still birth rate was 17.83% (56 out of 314 cases) or 217/1000 live birth. Maximum still births were in abruption group which was 27.22%. Out of 258 alive births, 45 dies in early neonatal period. Maximum death in early neonatal period occur in abruption group was 22.13%.

Among the 314 babies, perinatal death rate is 32.17% (101 out of 314 cases), among them maximum in abruption cases which was 43.33%, followed by indeterminate group 25%, and minimum in placenta previa group which was 14.29%.

Prematurity is the most common complication accounting for 57.75% Cases. Among abruption group 66.41 % babies were premature followed by 52.94% in indeterminate group and 47.31% in placenta previa group.

**Conclusion:** Abruptio placentae remains important cause of perinatal morbidity and mortality in third trimester bleeding.

**Keywords:** Antepartum hemorrhage, Placenta previa, Abruptio placentae.

### Introduction

Obstetric hemorrhage is the most common cause of maternal morbidity and mortality and is also a major cause of perinatal morbidity and mortality. Among Obstetric hemorrhage cases, third trimester bleeding is the most common cause of maternal mortality accounting for half of the deaths. Third trimester bleeding is defined as any

bleeding from or into the genital tract after the period of viability, 28 weeks in India and before the end of second stage of labour, It is also called as antepartum hemorrhage. It complicates about 2-5% of all the pregnancies. It can be due to placenta previa, abruptio placentae, indeterminate cause or local causes of genital tract. It is one of grave obstetrical emergency and fear to pregnant

women, challenge to obstetrician and is a concern for patients and her doctor.

APH is responsible for 15% of perinatal deaths. In contrast to placental abruption, placenta previa is less commonly associated with perinatal loss. Various foetal complications are prematurity, low birth weight, FGR, intrauterine death, malpresentation, congenital malformation and birth asphyxia. Perinatal mortality is less than 10 per 1000 total births in developed countries while it is much higher in India 28/1000 total births<sup>1</sup>. In developing countries widespread preexisting anemia, difficulties with transport, restricted medical facilities, decreased awareness on part of patient and relatives are largely responsible for high MMR and perinatal mortality. Although third trimester bleeding cannot be prevented but perinatal and maternal morbidity and mortality associated with it can be reduced significantly by aggressive expectant management.

Presently increasing use of trans abdominal sonography / trans vaginal sonography for placental localization and detection of abruption, improved obstetric and anaesthetic facilities, increasing use of blood and its products to correct anemia and advanced neonatal care facilities to make increased chances of survival of a preterm infant. All collectively have played important role in decreasing perinatal as well as maternal morbidity and mortality. This study was done to evaluate how far we have come and the effect of such treatment on the perinatal outcome. The foetal outcome will be assessed in terms of birth status, APGAR score at birth, birth weight, gestational age and early neonatal complications.

### Material and Methods

This study was a prospective observational study undertaken during a period of one year from 1<sup>st</sup> March 2018 to 28 Feb 2019 in J K Lon Hospital, Kota. There were 312 pregnant women cases found with third trimester bleeding out of 11202 total deliveries.

All pregnant women booked or unbooked coming with complaint of bleeding per vaginum with

gestational age > 28 weeks were included in study and pregnant women coming with complaint of bleeding per vaginum with gestational age < 28 weeks, patients suffering from any other bleeding disorder, bleeding from a source other than uterus (Example - cervical polyp, cervical erosion, Ca cervix, coital injury, local trauma etc) were excluded.

Patients with bleeding per vaginum >28 weeks who were admitted in the hospital and who met the inclusion criteria were noted. Gestational age was calculated from the last menstrual period or earlier scans. After taking thorough history, general physical examination and obstetrical examination was carried out including foetal heart sound assessment.

Blood samples were obtained for lab investigations (blood grouping, complete hemogram, RFT, LFT, coagulation profile etc) and cross matching. USG was done to establish the cause of APH, when maternal and foetal conditions were stable and findings were noted in relation to Gestational age, Placental site, Retro-placental hematoma and Placental separation.

The data was collected using a prepared proforma meeting the objectives of the study, this data was compiled and analysed on the basis of various causes of APH and its association with the following foetal outcomes was evaluated.

### Foetal Outcomes

- Prematurity
- Low Apgar Score
- Neonatal Jaundice
- Respiratory distress
- Meconium aspiration
- Perinatal mortality (Stillbirth, Early Neonatal / Newborn deaths within first week)

These particular outcomes are chosen because of existing evidence of their association with Ante Partum Hemorrhage.

### Results

In the study period spanning from 1<sup>st</sup> March 2018 to 28<sup>th</sup> February 2019, the total number of deliveries conducted were 11,202. Among them

6,082 cases were delivered vaginally and 5,120 cases were delivered by cesarean Section. After applying inclusion and exclusion criteria there were 312 cases of third trimester bleeding noted and then evaluated as per various cause of APH and evaluation of 314 babies done, born to these mothers including two twins one in placenta previa and one in abruption. In the study period we encountered 312 cases of third trimester bleeding, giving an incidence of 2.79 percent. Incidence of abruptio placentae, placenta previa and indeterminate causes is thus calculated 1.60%, 0.87% and 0.32% respectively.

Out of the 314 babies delivered, 258 were alive at birth while 56 were dead. Thus overall still birth rate was 17.83% (56 out of 314 cases) or 217/1000 live birth. Maximum still birth were in abruption group which was 27.22%. Among 258 live births, 45 dies in early neonatal period. Thus perinatal death rate is 32.17% (101 out of 314 cases), maximum in abruption cases which was 43.33%, followed by indeterminate group 25%, and minimum in Placenta previa group which was 14.29%. hence previa group had better survival chances for 84 babies out of 98 birth.

Data Analysis shows that a total of 208 babies delivered with **low birth weight** giving an incidence of 66.24% while 55 babies out of 314 have **very low birth weight** (Birth weight less than 1.5 kg) giving an incidence of 17.51%. Incidence of low birth weight was 69.44%, 64.29% and 55.56% in abruption, previa and

indeterminate group respectively while incidence of very low birth weight was 22.45%, 15.56%, and 13.88% in previa, abruption and indeterminate group respectively.

There was 58.42% incidence of perinatal death in 28-32 weeks gestation group (59 out of 101 cases), followed by 35.64%, 5.94% in 33-36 weeks and 37-40 weeks gestation group respectively. Its incidence approx equally in abruption, previa and indeterminate group. Incidence of stillbirth was 60.71%, 35.71% and 3.57% in 28-32 weeks, 33-36 weeks and 37-40 weeks group respectively.

Taken the apgar score less than 7 as a definition for foetal asphyxia, data indicates that 45.35% newborns were asphyxiated at 1 minute while after initial resuscitation 20.93% remained still asphyxiated at 5 minutes and subjected for further resuscitation in NICU. If we evaluate the data group wise it is revealed that 26.71% in abruption group, 10.75% in previa group and 26.47% in indeterminate group remained asphyxiated at 5 minutes after birth and admitted in NICU.

Data analysis shows that prematurity is the most common complication account for 57.75% Cases. Among abruption group 66.41 % babies were premature followed by 52.94% in indeterminate group and 47.31% in placenta previa group. Neonatal jaundice is the 2<sup>nd</sup> common complication account for 17.82% cases. Respiratory distress accounts for 14.34% cases and meconium aspiration accounts for 6.20% cases.

**Table: 01** Distribution of Perinatal outcome according to cause of APH

	Abruptio Placentae	Placenta Previa	Indeterminite Cause	Total
<b>Baby birth</b>	180	98	36	<b>314</b>
<b>Live Born</b>	131	93	34	<b>258</b>
<b>IUD / Still Birth</b>	49	05	02	<b>56</b>
<b>Early Neonatal Death</b>	29	09	07	<b>45</b>
<b>Perinatal Death</b>	78	14	09	<b>101</b>

**Table: 02** Distribution of babies as per Birth Weight according to cause of APH

Baby Birth Weight	Abruptio Placenta	Placenta Previa	Indeterminate Cause	Total
<1.5 Kg (Very Low Birth Wt.)	28	22	05	55
1.5 - 2.49 Kg (Low Birth Wt)	97	41	15	153
≥ 2.5 Kg	55	35	16	106
<b>Total</b>	<b>180</b>	<b>98</b>	<b>36</b>	<b>314</b>

**Table: 03** APGAR Score in live born babies (258 Live Birth)

	Apgar Score	Abruptio Placentae	Placenta Previa	Indeterminate Cause	Total
At 1 Min.	<7	66	37	14	117
	7-10	65	56	20	141
At 5 Min.	<7	35	10	09	54
	7-10	96	83	25	204

**Table: 04** Distribution of perinatal outcome according to POG at delivery as per cause of APH

	Abruptio Placentae	Placenta Previa	Indeterminate Cause	Total	
Still Birth & IUD	30	02	02	34	
Perinatal Death	46	08	05	59	28-32 Weeks
Still Birth & IUD	17	03	00	20	
Perinatal Death	28	05	03	36	33-36 Weeks
Still Birth & IUD	02	00	00	02	
Perinatal Death	04	01	01	06	37-40 Weeks
<b>Total (SB/PND)</b>	<b>49/78</b>	<b>05/14</b>	<b>02/09</b>	<b>56/101</b>	

**Table: 05** Distribution of neonatal Complications according to cause of APH

	Abruptio Placentae (131)	Placenta Previa (93)	Indeterminate Cause (34)	Total (258)
Prematurity	87	44	18	149
Respiration Distress	19	09	09	37
Meconium Aspiration	13	02	01	16
Neonatal Jaundice	22	13	11	46

## Discussion

Antepartum hemorrhage still ranks one of the gravest obstetric emergencies. Even with the best obstetric care due to dramatic suddenness, a pregnant woman can become exsanguinated due to bleeding in third trimester of pregnancy. It is

one of the major causes of maternal & foetal morbidity and mortality throughout the world, occurring in 3 to 4 percent of all pregnancies.

- The incidence of antepartum haemorrhage in our study is 2.79% (312/11,202 Deliveries). The incidence observed by

Menon and Sokhi KK<sup>2</sup> from India was 2.7% and by Arora R<sup>3</sup> from India was 2.5%. Thus incidence of APH in this study was found to be similar to other Indian studies. In a study done by Kwawukume<sup>4</sup>, the incidence of APH was found to be 1.2-1.8%. It was reported to be 1.6% by Bako, et al<sup>5</sup>. and Adegbola<sup>6</sup> reported a lowest incidence of APH of 0.2%.

- In the present study, 82.17% of the patients with antepartum hemorrhage had live births, 17.83% (56/314) had either intrauterine death or stillbirth and 17.44% (45/258) had early neonatal deaths. This was comparable to the study by Jaju KG, et al., where 45.5% had either intrauterine death or still birth, and 4.5% were neonatal deaths<sup>7</sup>. Mukherjee, et al. reported higher (67.9%) still births or intra uterine deaths and Purohit A, et al. reported only 15.6% of IUD or still birth. Purohit A, et al. also reported 7% of neonatal deaths which was comparable to the present study<sup>8</sup>. In the abruption group 72.78% and placenta previa 94.90% were live births. This was in contrast to Bako, et al. study where 61% of the births in patients with abruption were dead born<sup>5</sup>. However, only 10% of the births in patients with placenta previa were dead born in the same study.
- In the present study, 66.24% of the births had birth weight <2.5 Kg, lower to the study by Bhandiwad, et al.<sup>9</sup> in which 85% of the births had wt <2.5 Kg. Arora, et al. showed little low incidence compared to the above study where 67% had birth weight <2.5 Kg. Contrary to the above study Adekanle, et al. only 25% had birth weight <2.5Kg<sup>10</sup>. In the present study, babies had low birth weight because of pre-eclampsia association in the mother and also due to prematurity.
- In the present study, 45.35% (117/258 cases) with APH had an APGAR score <7 at one minute. The study conducted by Adekanele, et al.<sup>10</sup> reported that 61.1% of

babies in APH group had APGAR score of <7 at one minute. 61.1% had an APGAR score of >7 at 5 minutes. In patients with antepartum hemorrhage majority 79.07 % had APGAR score >7 in the present study.

- One of the major aspects of this study was to study the perinatal outcome in various groups of APH. Prematurity was the most common complication in APH, followed by Neonatal jaundice and birth asphyxia. In the present study 14.34% had respiratory distress comparable to 3% in the study by Jaju KG, et al. In present study physiological jaundice was high (17.83%) because of prematurity. Contrary to this only 7.58% in study by Jaju KG, et al. had jaundice. Prematurity was seen in 57.75% in this study contrary to which 25.76% in Jaju KG, et al. had prematurity<sup>7</sup>.

### Conclusion

From the present study it can be concluded that antepartum hemorrhage is still a leading cause of perinatal morbidity and mortality in our country. The commonest cause of antepartum hemorrhage was placental abruption followed by placenta previa.

In abruption group foetal morbidity and mortality was also high when compared to placenta previa group. This was because most of the cases in abruption group presented late and already had complications at the time of admission, while in placenta previa group diagnosis was made early by ultrasound before they became symptomatic clinically, So they were carefully managed. perinatal mortality is high because of prematurity. Routine antenatal check-up, timely referral, timely cesarean section and wider acceptance of expectant line of management in tertiary centre with availability of good neonatal intensive care unit will help further to lower the perinatal morbidity and mortality.

### Conflicts of interest and source of funding:

None

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