



PERINATAL OUTCOME OF SUBCHORIONIC HEMORRHAGE IN EARLY PREGNANCY VAGINAL BLEEDING

Manisha Gupta*, Neelima Agarwal*, Alpana Agrawal*

*Professor, Department of Obstetrics & Gynaecology Santosh Deemed To Be University,
Ghaziabad

Corresponding author

Dr Manisha Gupta
R 14/22 Rajnagar, Ghaziabad

ABSTRACT

Introduction

First trimester vaginal bleeding is an early indicator of underlying placental pathology and is a causative factor for adverse perinatal outcome. The presence of subchorionic hemorrhage is associated with 4-33% rate of miscarriage, but nothing conclusive has been reported about the outcomes of subchorionic hematomas in the ongoing pregnancies. So we aimed to study the outcome in pregnancies with subchorionic hemorrhage presenting with vaginal bleeding in up to 20 weeks of pregnancy.

Methodology

The present study was an Observational study conducted over a period of one year. A sample size of 230 patients presenting with threatened abortion within 20 weeks of gestation and who fulfilled the inclusion criteria were recruited in the study. A routine ultrasound examination was done to look for presence of subchorionic hemorrhage and outcomes of such pregnancies were studied.

Results

Total 230 subjects presented with bleeding in early pregnancy with gestational age less than 20 weeks. On ultrasound examination, 31 (13.4%) patients were found to have subchorionic hemorrhage. The current study showed that women with subchorionic haematoma had significantly higher rate of complications.

Conclusion

There is an increased risk of adverse outcome in pregnancy with subchorionic hemorrhage.

Keywords: Threatened abortion, vaginal bleeding, subchorionic hemorrhage, perinatal outcome

INTRODUCTION

The occurrence of bleeding in early pregnancy is a cause for stress and anxiety to the mother and treating obstetrician regarding the outcome of pregnancy. About 50% cases of first trimester bleeding end in miscarriage within 20 weeks of gestation (1) and those women who remain pregnant have an increased risk of developing other complications

later in pregnancy (2). Bleeding in early pregnancy results in influx of maternal blood in placenta which leads to rise in oxygen tension and release of Reactive Oxygen Species as a byproduct of aerobic respiration. Paucity of anti oxidants leads to an imbalance which results in adverse pregnancy outcomes. The outcome of early pregnancy bleeding is likely to be affected by cause of bleeding, gestational

age at time of bleeding and amount of bleeding.

Ultrasonography is an important modality for confirmation of diagnosis and also for predicting the outcome in cases of threatened abortion. Apart from ascertaining the viability, the presence of subchorionic hemorrhage which is associated with 4-33% rate of miscarriage(3), can also be diagnosed. In 18-39% of the women presenting with threatened miscarriage, a subchorionic or retroplacental hematoma can be seen on ultrasound(4). Nothing conclusive has been reported about the clinical implications of subchorionic hematomas. One of the most studied and reported adverse outcome with subchorionic hematoma is miscarriage.

With this background, we aimed to assess the outcome in pregnancies with subchorionic hemorrhage presenting with vaginal bleeding in up to 20 weeks of pregnancy.

METHODOLOGY

The present study was an observational study conducted over a time period of one year from September 2019 to September 2020 in a tertiary care hospital in Ghaziabad. Antenatal patients presenting with bleeding before 20 weeks of gestation who met the inclusion and exclusion criteria were recruited in the study.

INCLUSION CRITERIA-

1. No hormonal contraception use
2. Spontaneous conception
3. Singleton pregnancy
4. Sure of dates

EXCLUSION CRITERIA-

1. History of any chronic medical illness
2. Addictions like tobacco or drug abuse

3. Extrauterine, Nonviable or Molar pregnancy
4. Congenital uterine anomalies
5. Pelvic tumors
6. Local cervical and vaginal lesions causing bleeding
7. Bleeding disorders

Approval from the ethical committee of the institution was obtained before conducting the study. (F No. SU/2019/1296[9], Dated 3/9/2021) After explaining the purpose and procedures of the study, informed written consent was taken from all participants before recruitment in the study. The subjects were assured of their confidentiality.

A detailed history was taken including age, parity, duration of onset of bleeding, amount of blood loss and its association with pain. Clinical, systemic and gynecological examination was done for each patient. Routine and special investigations like ultrasound (pelvis/transvaginal) were done to confirm fetal viability, subchorionic hematoma and placental localization. The diagnostic criteria for threatened miscarriage was based on documented fetal cardiac activity on ultrasound with a history of vaginal bleeding in the presence of a closed cervix and gestational age at 20 weeks or less. All subjects with presence of subchorionic hemorrhage were followed throughout the pregnancy and their perinatal outcome was studied.

The outcome of pregnancy is categorized as abortions and ongoing live pregnancies, where the perinatal outcome were observed.

Perinatal outcome (continuation of pregnancy after 20 weeks)

- (a) Preterm delivery

- (b) Low birth weight (<2500 kg)
- (c) Antepartum hemorrhage
- (d) Intrauterine growth retardation
- (e) Neonatal intensive care unit (NICU) admission
- (f) Full term birth with a healthy fetus

The STROBE guidelines were followed while reporting the clinical data.

The data was tabulated and percentages (frequencies) of various parameters were calculated and subjected to statistical test using chi-square test, T test wherever applicable. Statistical significance was taken as P value ≤ 0.05 .

RESULTS

Total 230 subjects presented with bleeding in early pregnancy with gestational age less than 20 weeks. Out of these 163(70.8%) patients had live birth and 67(29.2%) pregnancies ended in abortion. On ultrasound examination, 31 patients were found to have subchorionic hemorrhage. The incidence of subchorionic hemorrhage was observed to be 13.4%.

The outcome of pregnancies complicated with subchorionic hemorrhage were studied and the incidence of women who had abortion after bleeding 70.9%(n=22) were found to be much higher than who continued pregnancy 29.1%(n=9). The odds ratio in women who had subchorionic hemorrhage and whose pregnancy ended in abortion was significantly higher (Odds ratio 8.3654, $p < 0.0001$).

The mean age \pm SD was 25.15 ± 4.11 years where 79.31% women fell in the age group of 21-30 years. Maximum number of

women in study group were with parity of one 42.53% followed by primigravida 40.23%.

The mean period of gestation of patients who had sub chorionic hemorrhage was 8.64 ± 1.34 weeks. (Table 1).

Most of the women had spontaneous abortions (n=10) and the different types of abortions are depicted in chart 1. All the women with missed abortion (n=7) had surgical termination.

Rebleeding after an initial episode of bleeding occurred in 61.27%(n=19) cases. Out of these, only n=2 pregnancies ended in live birth (Odds ratio 5.5, $p < 0.05$) It includes

10 cases of Spontaneous abortion which occurred after rebleeding.

The current study showed that women with sub chorionic haematoma had significantly higher rate of complications. (Table 2). The incidence of Indeterminate APH was higher in the study group. The rate of NICU admissions were higher and statistically significant.

DISCUSSION

The present study shows that Threatened abortion in early pregnancy is an important predictor of adverse perinatal outcome. Compared with women who did not bleed during pregnancy, the risks of various maternal and fetal outcomes were found to be significantly raised.

In the present study 29.2% patients with first trimester bleeding aborted, the mean gestation of which was found to be 8.64 ± 1.34 weeks which is consistent with many other studies. (5,6) In contrast to the findings in the present study, subchorionic hemorrhage was not associated with increased pregnancy loss. (7,8) The timing of bleeding coincides with the timing of

shift from luteal production to placental production of progesterone. This causes a slight decrease in progesterone levels leading to activation of process of vaginal bleeding resulting in abortion.

Majority of the pregnancy losses in the present study ended in incomplete abortion which was in contrast to studies by Hokabaj et al and Kamble PD et al (6,9) where percentage of missed abortion was higher.

Incidence of Premature rupture of membranes and Preterm labour was increased in the current study. The production of hydroxyl radicals from subchorionic bleeding result in the weakening and subsequent rupture of the amniotic membranes. (2,3,10). Subchorionic hematoma forms a nidus for infection which may cause preterm rupture of membranes(11).

The risk of Abruptio placenta and Indeterminate APH(12) was significantly increased in cases with subchorionic hemorrhage. In this study interderminate APH was significantly higher in cases with subchorionic bleeding which was consistent with studies by Mulik et al(14), Saraswat et al(12) and Wijesiriwardana et al(13,15).

The limitations of the present study were a relatively small number of the study population. Moreover, the out come of patients with mild subchorionic hemorrhage who may not report to hospital or come for follow up will not be known. It is recommended that to study the pregnancy outcomes a population screening with follow up be done.

CONCLUSION

The probability of abortion and adverse pregnancy outcome increases in the

patients with subchorionic hemorrhage. Early recognition of such pregnant women and classifying them as "high risk pregnancies is important so as to facilitate decision making regarding management.

REFERENCES

1. Hasan R, Baird DD, Herring AH, Olshan AF, Jonsson Funk ML, Hartmann KE. Association between first-trimester bleeding and miscarriage. *Obstet Gynecol.*2009;114:860
2. Van Oppenraaij RH, Jauniaux E, Christiasen OB, Horcajadas JA, Farquharson RG, Exalto N et al. Predicting adverse obstetric outcome after early pregnancy events and complications: a review. *Hum Reprod Update.*2009;15:409-21
3. Gupta S, Agarwal A, Banerjee J, Alvarez JG (2007) The role of oxidative stress in spontaneous abortion and recurrent pregnancy loss: a systematic review. *Obstet Gynecol Surv.*2007;62:335–347
4. Tongsong T, Srisomboon J, Wanapirak C. Pregnancy outcome with threatened abortion with demonstrable fetal cardiac activity. *J Obstet Gynecol.*1995;21:331-5
5. JahanAra.,Dahiya K, Dahiya A Study of maternal and perinatal outcome in women with first trimester vaginal bleeding. *International J. of Heathcare and Biomedical Research.*2018 January;6(2):122-130
6. Hokabaj S, Rashmi M, Roy P, Shanthi S, Karat C, Garg R. A Prospective Cohort Study of Maternal and Perinatal Outcome in Pregnancy with First-trimester Vaginal Bleeding. *Journal of South Asian Federatiin of Obstetrics*

- and Gynaecology .2018 Jan-Mar;10(1):49-53
7. khlghpoor S, Tomasian A. Safety of chorionic villus sampling in the presence of asymptomatic subchorionic hematoma. *Fetal Diagn Ther* 2007;22:394–400.
 8. Zhou J, Wu M, Wang B, Hou X, Wang J, Chen H, et al. The effect of first trimester subchorionic hematoma on pregnancy outcomes in patients underwent IVF/ICSI treatment. *J Matern Fetal Neonatal Med* 2017;30:406–10.
 9. Kamble PD, Bava A, Shukla M, Nandanvar YS. First trimester bleeding and pregnancy outcome. *Int J Reprod Contracept Obstet Gynecol* 2017;6:1484-7
 10. Yakıştıran B, Yüce T, Söylemez F. First Trimester Bleeding and Pregnancy Outcomes. *International Journal of Womens Health and Reproduction Sciences*.2016 January;4(1):4-7
 11. Vardhan S, Bhattacharyya TK, Kochar SPS, Sodhi B. Bleeding in Early Pregnancy. *MJAFI* 2007; 63: 64-66
 12. Saraswat L, S Bhattacharya, A Maheshwari, S Bhattacharya. Maternal and perinatal outcome in women with threatened miscarriage in the first trimester: a systematic review. *BJOG* 2010;117:245–257
 13. Wijesiriwardana A, Bhattacharya S, Shetty A, Smith N, Bhattacharya S. Obstetric Outcome in Women With Threatened Miscarriage in the First Trimester. *Obstetrics & Gynecology*.2006;107(3):557-562
 14. Mulik V, Bethal, K.J, Bhal. A retrospective population-based study of primigravid women on the potential effect of threatened miscarriage on obstetric outcome. *Journal of Obstetrics and Gynaecology*. 2004 April;24(3);249–253
 15. Mackenzie N. Naert, Hanaa Khadraoui, Alberto Muniz Rodriguez, Mariam Naqvi,
 16. Nathan S. Fox. Association Between First-Trimester Subchorionic Hematomas and Pregnancy Loss in Singleton Pregnancies. *Obstetrics & Gynecology* 2019 August ; 134(2); 276-81

TABLES

Table 1: : PERIOD OF GESTATION AT BLEEDING WITH SUBCHORIONIC HEMATOMA

Period of Gestation	N=31(%)
<8 weeks	9(29%)
8 ⁺ -12 weeks	19(61.2)
12 ⁺ -16 weeks	2(6.4)
16 ⁺ -20 weeks	1(3.2)

Chart 1: Types of abortion in pregnancies with Subchorionic hemorrhage(n=22)

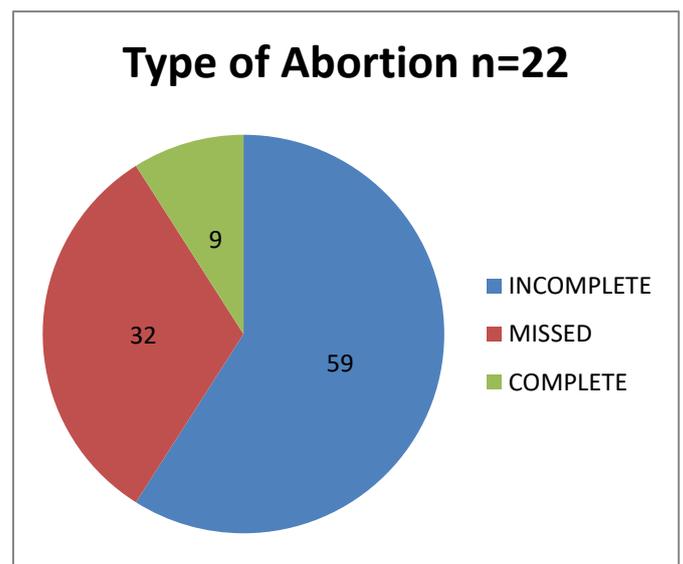


Table 2: ASSOCIATION OF SUBCHORIONIC HAEMATOMA AND PERINATAL OUTCOME

Outcome* (More than one response)	Subchorionic Hemorrhage present n=31(%)	Subchorionic Hemorrhage Absent n=199(%)	P value
Normal	1(3.2%)	70(35.1%)	0.0004
Abortion	22(70.9%)	45(22.6%)	<0.0001
Preterm Labour	3(9.6%)	11(5%)	0.3
Premature rupture	2(6.4%)	23(11.5%)	0.39

of membranes			
Antepartum Hemorrhage	6(27.2%)	10(5%)	<0.0001
Small for dates	5(16.1%)	21(10.5%)	0.3
NICU admission	7(22.5%)	19(9.5%)	0.03

ETHICAL CLEARANCE LETTER



SANTOSH

Deemed to be University
(Established u/s 3 of the UGC Act, 1956)

F. No. SU/2019/1296[9]

Dated: 03/09/2019

Subject: Grant of Ethical Clearance for the Project "Pregnancy Complications and Perinatal Outcome in Women with Vaginal Bleeding During the First 20 Weeks of Pregnancy", submitted by Dr. Manisha Gupta, Department of OBG, Professor.

With reference to his/her request for grant of Ethical Clearance for the Project entitled "Pregnancy Complications and Perinatal Outcome in Women with Vaginal Bleeding During the First 20 Weeks of Pregnancy", **Dr. Manisha Gupta, Professor** is informed that the Project submitted by him/her was considered by the **Screening Committee** of the Santosh Medical College & Hospitals in its meeting held on 17.06.2019. The recommendations of the **Screening Committee** were considered in detail by the Institutional **Ethics Committee** in its meeting held on 17.06.2019 and the same was **approved** by the **Ethics Committee**.

He/She is informed accordingly for further necessary action.

Dr. Manisha Gupta
Professor
Department of OBG

[Dr. V. P. Gupta]
REGISTRAR



Copy to:

1. The Vice Chancellor
2. The Dean, SMC&H
3. The Dean – Research
4. The Dean – Academics
5. The Director - IQAC
6. HOD of OBG