



A Study On Pregnancy Outcome In Patients With Subchorionic Hemorrhage Diagnosed In First Trimester

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Abstract

Objective: To evaluate the outcome in cases

of subchorionic hemorrhage in terms of maternal and fetal complications and to study the correlation between the size of subchorionic hematoma and pregnancy outcome.

Material & Methods: A prospective study was conducted on patients who attended antenatal clinic in a tertiary teaching in Navi Mumbai over a span of one and half years. Study group included 30 pregnant women with no comorbidities with singleton viable pregnancy who were detected with subchorionic hemorrhage on ultrasound between 6-12 weeks of gestation with or without vaginal bleeding. Control group included 30 pregnant women with no comorbidities and single viable pregnancy who did not have subchorionic hemorrhage between 6- 12weeks. Both the groups were followed up throughout the antenatal period and monitored for maternal parameters such as size of hematoma, episodes of bleeding, maternal complications, mode of delivery and fetal parameters such as gestational age and weight at delivery, APGAR score and NICU admissions.

Results: 3 out of 30 (10%) patients in the study group resulted in miscarriage. One out of three (33.3%) had hematoma grade 3 (25-50% of G-sac), one out three (33.3%) had superimposed subamniotic hemorrhage and in one out of three (33.3%), the size of hematoma continued to increase. 3 out

30 (10%) in the control group had spontaneous abortions. Parameters such gestational age, mode of delivery and weight at delivery, APGAR scores were similar in both study and control groups.

Conclusion: Though The Outcome in both the groups were similar, the outcome of pregnancy in cases of subchorionic hemorrhage depends on the grading of hematoma and possibility of resolution of hematoma

Keywords: NIL

Introduction

Subchorionic hemorrhage is a common finding on obstetric sonography. It is either an anechoic or hypo echoic crescent shaped area between chorion and the decidua. The exact etiology is not known, it is believed that subchorionic hemorrhage is due to partial separation of the chorionic membranes from decidua.

Number of studies have investigated the association between the presence of subchorionic hemorrhage

and adverse pregnancy outcomes such as spontaneous abortion, preterm labour, abruption, intrauterine growth restriction, intrauterine fetal death, pregnancy induced hypertension, pre eclampsia, eclampsia, preterm labour, premature rupture of membranes. Nonetheless, clinical significance of subchorionic hemorrhage and its effects on pregnancy remains controversial.

Our aim was to study the fetal outcomes in pregnant women with subchorionic hemorrhage , to study the development of maternal complications in patients

with subchorionic hemorrhage, to study the correlation between the size of subchorionic hematoma and pregnancy outcome.

Material & Methods

This study was conducted on pregnant women attending antenatal clinic in a tertiary teaching hospital in Navi Mumbai over a span of one and half years. It was a prospective observational comparative study. Patients were divided into two groups. Study group included pregnant women with no comorbidities, singleton viable pregnancy, with subchorionic hemorrhage on ultrasound done at 6 – 12 weeks of gestation with or without vaginal bleeding. Control group included 30 pregnant women with no comorbidities, Singleton viable pregnancy, no subchorionic hemorrhage between 6-12 weeks and no vaginal bleeding.

Inclusion Criteria

1. Pregnant women between 6 - 12 weeks gestational age.
2. Single, viable, intrauterine pregnancy
3. Ultrasound s/o subchorionic hemorrhage in group A and no subchorionic hemorrhage in group B
4. No fetal anomalies

Exclusion Criteria

1. Inevitable abortion
2. No fetal cardiac activity
3. Gestational age >12 weeks
4. Recurrent pregnancy loss

Pregnant women with co morbidities like chronic hypertension, diabetes mellitus, k/c/o thyroid disorders, autoimmune diseases

Patients were selected as per the inclusion and exclusion criteria and divided into two groups, study group (group A) and control group (group B)

Study group (group A) included 30 pregnant women with subchorionic hemorrhage diagnosed on

ultrasound done at 6 – 12 weeks of gestation with or without vaginal bleeding and fitting the inclusion criteria.

Control group (group B) included 30 pregnant women with no subchorionic hemorrhage or vaginal bleeding and fitting the inclusion criteria.

Patients in both the groups underwent detailed history and examination.

In the ultrasound examination in Group A we noted the size of subchorionic hematoma, size of gestation sac. Grading of subchorionic hemorrhage as mild, moderate or severe done as the fraction of gestational sac size was done. Mild 1-24%, moderate 25-49% and severe >50%. Fetal cardiac activity was noted and gestational age was determined using crown rump length (CRL).

In Group B : Fetal cardiac activity was noted and gestational age was determined with CRL.

Group A patients underwent a repeat ultrasound scan after two weeks to note the increase or decrease in the size of the hematoma. In the patients who presented with bleeding and resulted in spontaneous abortion, the duration between first episode of bleeding and abortion was noted.

Patients in both the groups were followed up throughout the antenatal period and maternal outcome in terms of gestational age at the time of delivery, complications such as preeclampsia, preterm delivery, abruption were compared between both the groups.

Results

Results were expressed as percentage for different categories. Categorical data was analyzed by chi square test. A p- value of <0.05 was considered statistically significant. Results of the study conducted can be summarized as follows.

Table 1 - Distribution of patients according to gravidity

	Study Group	Control Group
Primigravida	15	17
Multigravida	15	13
Total	30	30

In the study group 50% of the women were primigravida while 50% were multigravida. In the control group 57% were primigravida and 43% were multigravida.

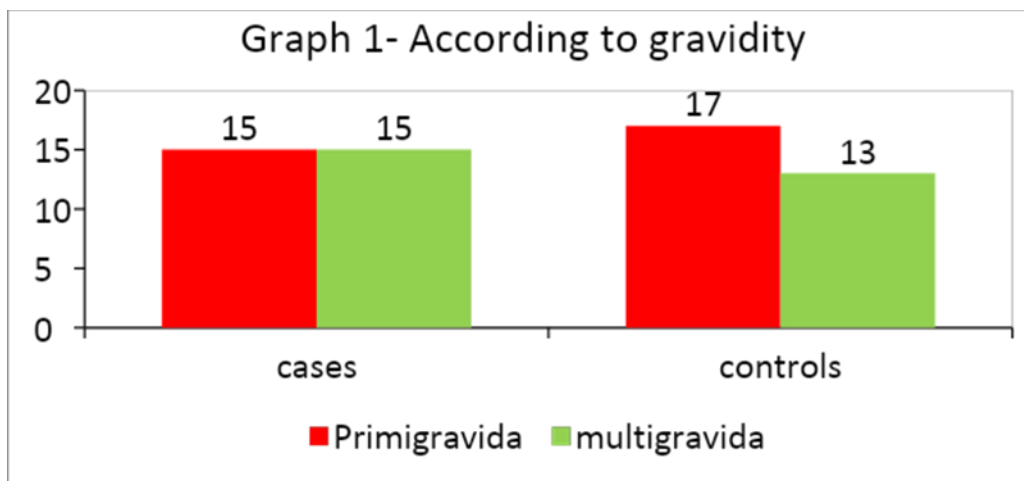


Table -2 Distributions according to gestational age at the time of detection of subchorionic hemorrhage

Gestational age	No. of Cases
6-8weeks	10
8.1-10weeks	11
10.1-12 weeks	9

In the study group of 30 pregnant women, subchorionic hemorrhage was detected between 6 - 8 weeks in 10 women (33.4%). Subchorionic hemorrhage was detected between 8.1 -10 weeks in 11 patients (36.6%) and in 9 out of 30 patients (30%) subchorionic hemorrhage was detected between 10.1-12 weeks.

Graph 2 - Gestational age at the time of SCH diagnosis

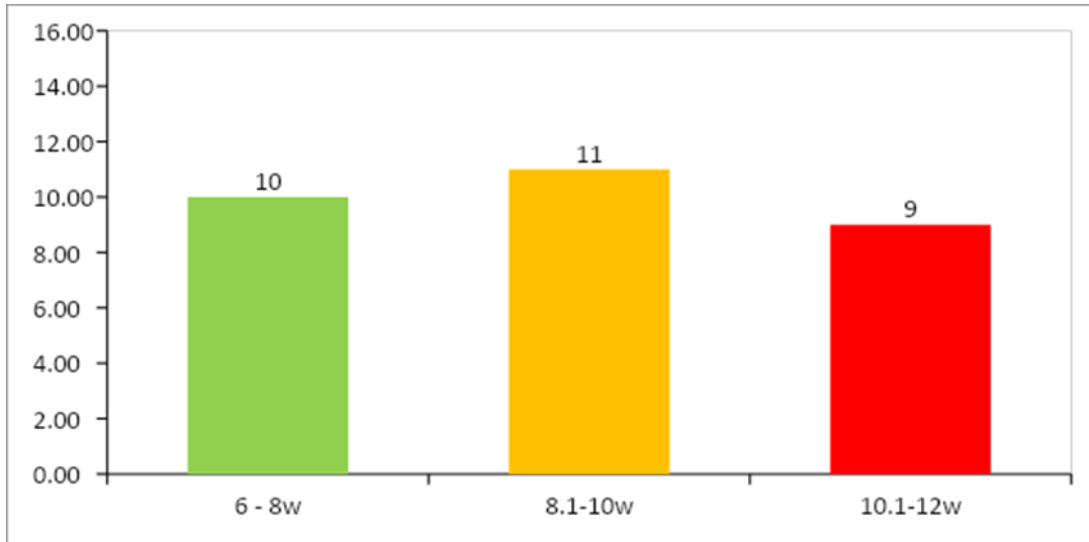


Table 3 - Distribution according to the grade of SCH

Grade	Number	Percentage
Mild (<25%)	21	70%
Moderate (25-49%)	6	20%
Severe (≥50%)	3	10%

In the study group, 21 out of 30 patients (70%) had mild SCH, 6 out 30 (20%) had moderate SCH and 3 out of 30 (10%) had severe grade of SCH.

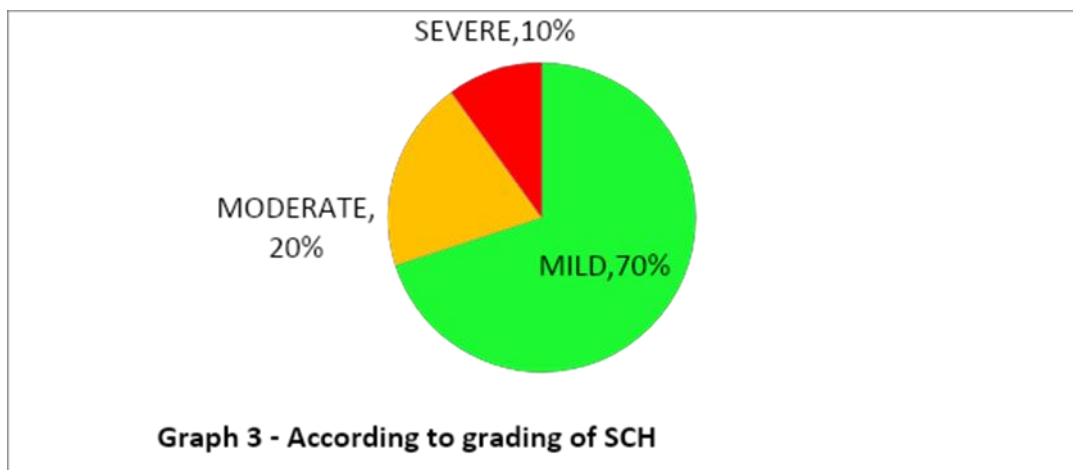


Table 4 - Outcome in the study group and the control group

Outcome	Study	Control
Aborted	3(10%)	3(10%)
Preterm	8(26%)	5(16%)
Full term	19(63%)	22(73%)

In the study group, 3 out 30 (10%) had spontaneous abortions. In the control group also, 3 out 30 patients had undergone spontaneous abortions. In the study group, 8 out 30 (26%) had preterm deliveries and in the control group 5 out of 30 (16%) had preterm deliveries. The p value is 0.16 for abortion. No significant difference in the outcome was observed between both the groups.

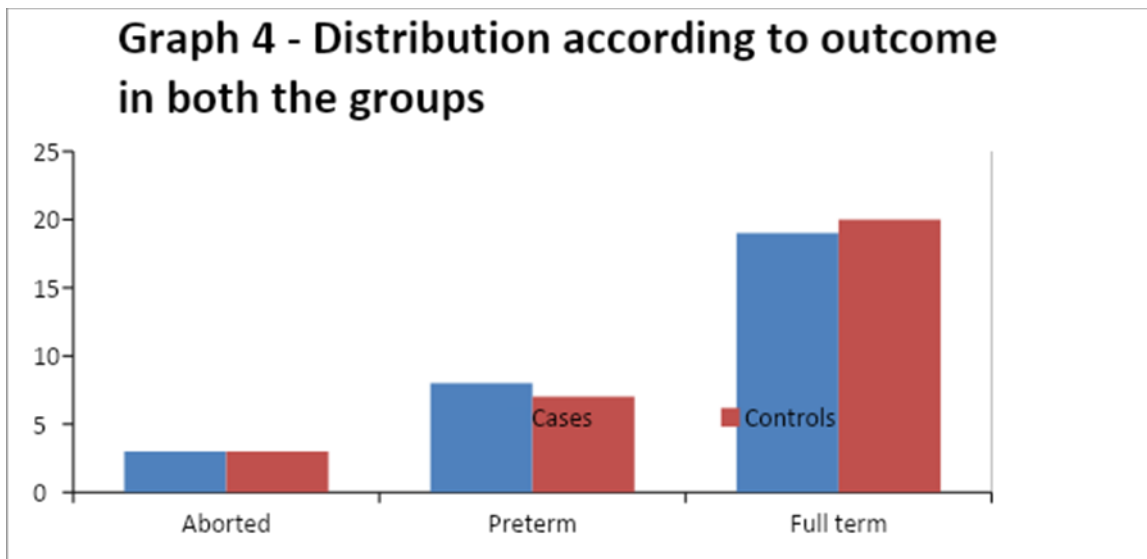


Table 5 - Grade of SCH and outcome

	Mild	Moderate	Severe
Spontaneous abortion	1	1	1
viable	20	5	2

Out of 21 patients with mild SCH 1 underwent spontaneous abortion (5%). In 6 cases of moderate SCH 1 underwent spontaneous abortion i.e. (17%). In 3 patients with severe SCH 1 (33.3%) has undergone spontaneous abortion. $\chi^2 = 2.7513$ and p - value is 0.25. Hence the grade of SCH has no significance in the outcome.

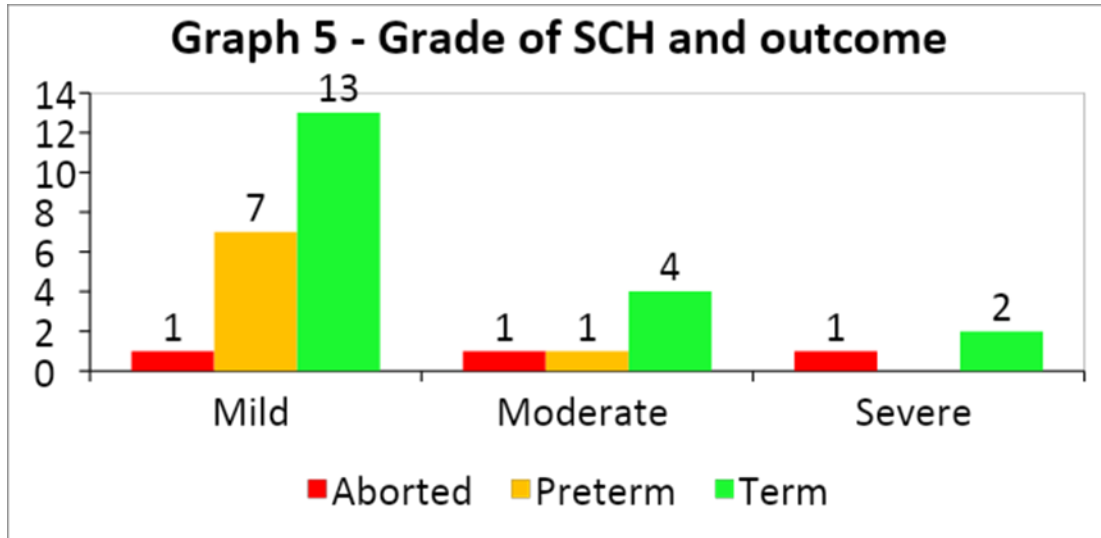
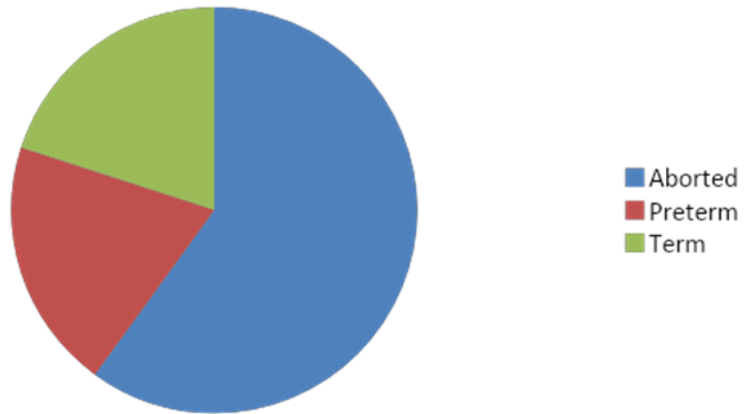


Table 6 - Increase or decrease in the size of hematoma and the outcome

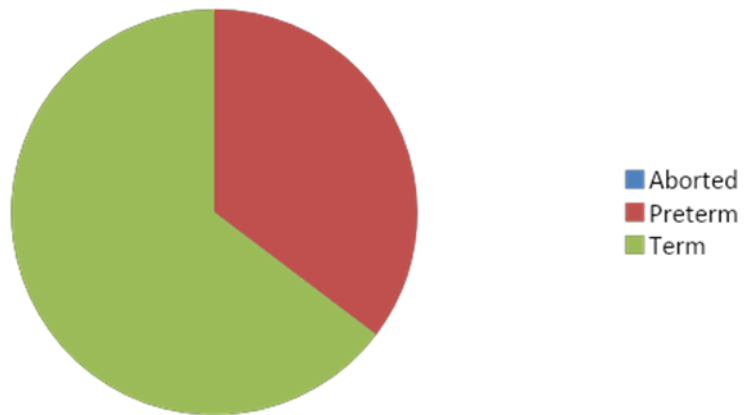
SIZE OF HEMATOMA	Aborted	Preterm	Term
Increased (n=5)	3	1	1
Decreased (n=17)	-	6	11
Resolved (n=8)	-	1	7

Out of the 5 patients with increasing size of hematoma, 3 had spontaneous abortion. In the patients with decreasing size of hematoma and in those in which the hematoma had resolved completely, pregnancy reached viability i.e. >28weeks and delivered a live baby. χ^2 is 10.6283 and p value is 0.031075. The result is significant $p < 0.05$.

Graph 6a - Outcome in cases of increase in size of SCH



Graph 6b - Outcome in cases of decrease in size of SCH



Graph 6c - Outcome in cases SCH resolved

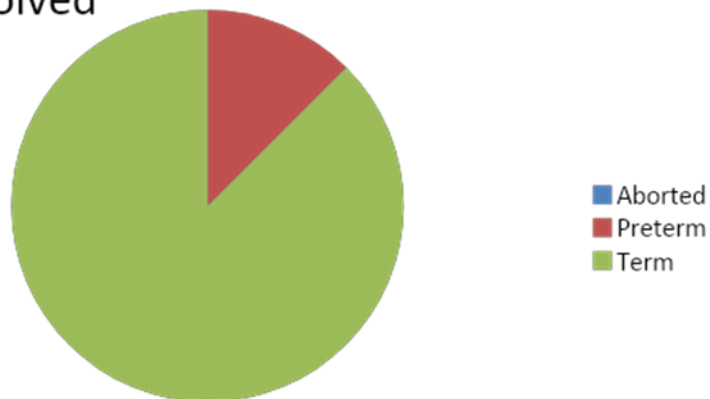


Table 7 - Gestational age at the time of delivery

Gestational Age	cases	controls
32-36.6wk	8	5
37-40	16	18
>40	3	4

Mean Gestational age at birth in the control group was 38weeks and it was noted to be higher than the mean gestational age in the study group 33.4weeks. It is statistically significant with p value 0.002.

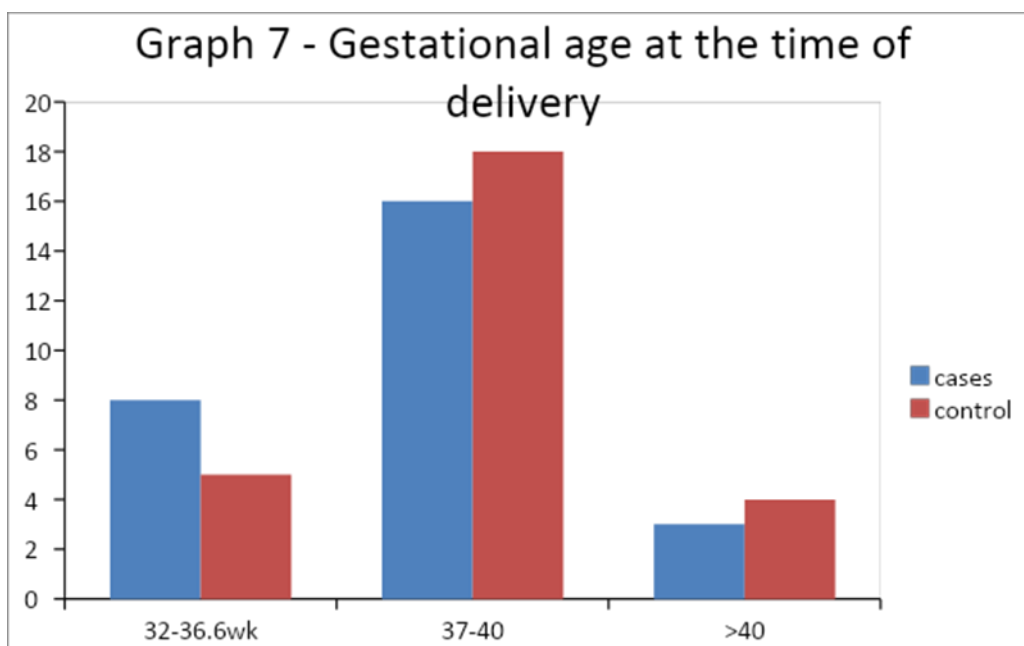


Table 8 - Mode of delivery

Mode of delivery	Cases	controls
LSCS	8	9

Vaginal Delivery	19	18
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There was no difference in the mode of delivery between the study and the control group.

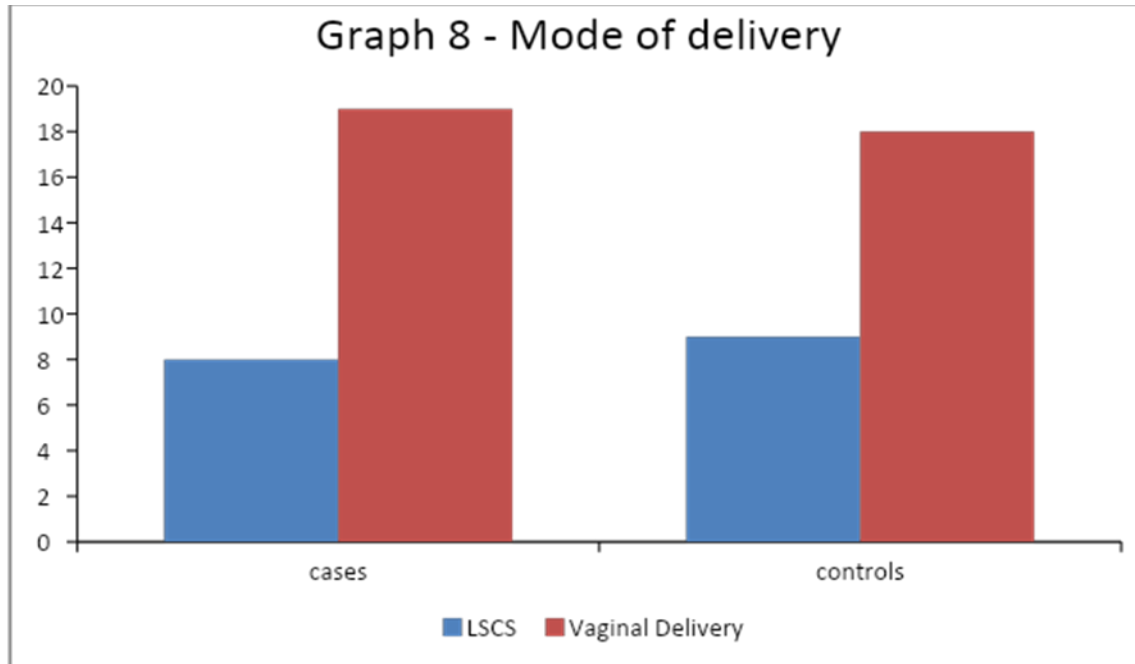


Table 9 - Distribution according to baby weight

Birth Wt.	<2kg	2-3kg	>3kg
cases	2	18	7
controls	4	14	9

In the study group 2 out of 27 (7%) had birth weight less than 2kg and the control group 4 out of 27 14% had birth weight <2kg. In the study group, 7 out of 27 (25%) had birth weight >3kg and in the control group 9 out of 27 (33%) had birth weight >3kg. p value 0.6 which is not significant.

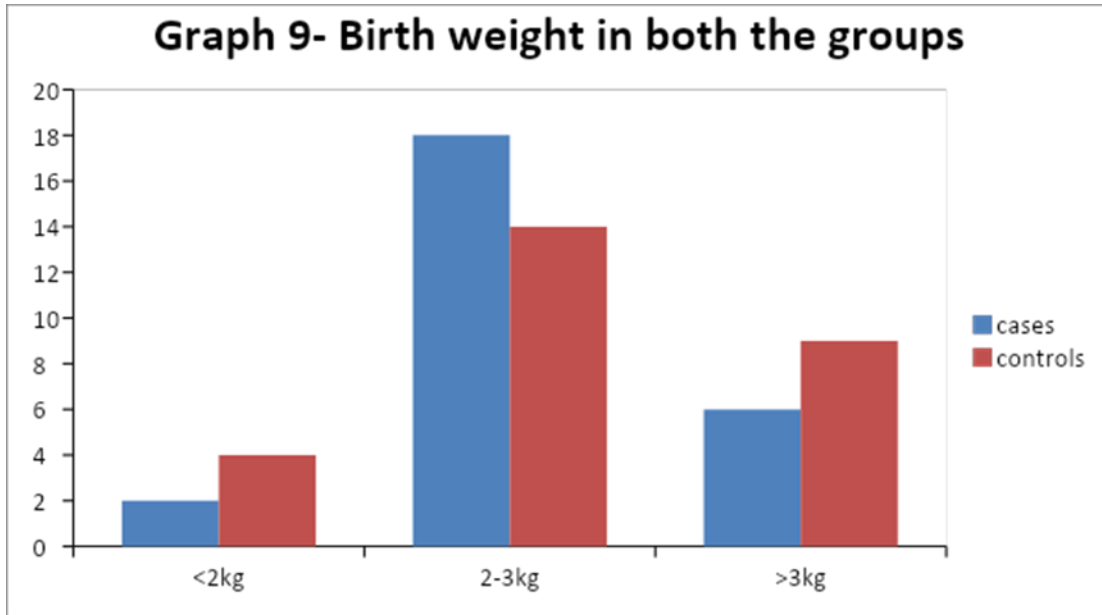
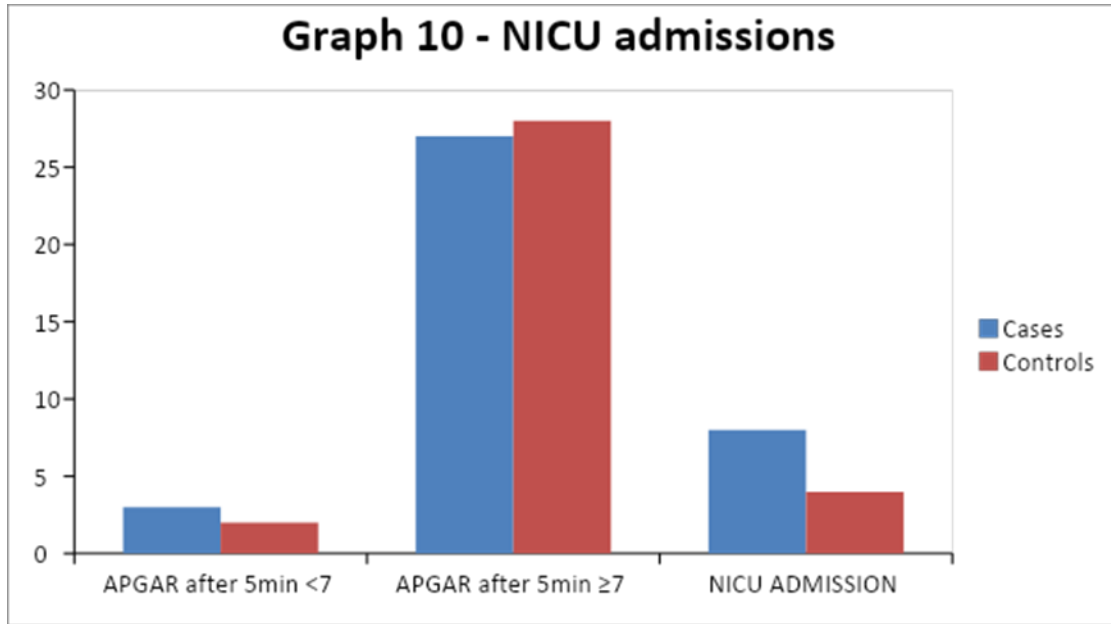


Table 10 - NICU admission and APGAR Score.

	Cases	Controls
APGAR after 5min <7	3	2
APGAR after 5min ≥7	24	25
NICU ADMISSION	8	4

There was slight increase in the NICU admissions in the patients with subchorionic hemorrhage in the first trimester compared to the control group but all the babies were discharged from NICU within 10 days. However increase in the NICU admission was not significant (p value 0.20)



Discussion

In the study group 50% were primigravida and 50% multigravida and in control group primigravida were 57% and 43% was multigravida.

In the study group, subchorionic hemorrhage was detected on ultrasound between 6-8 weeks of gestation in 10 out of 30 (33%) pregnant women. SCH was detected between 8.1 weeks and 10 weeks in 11 out of 30 patients (37%) and in 9 out of 30 (30%) patients between 10.1 weeks and 12 weeks of gestation.

In the study group, 70% of the patients had mild grade of SCH at the time of diagnosis, 20% had moderate grade of SCH and 10% severe grade of SCH.

A retrospective study conducted by Bennett GL et al in the year 1996 on 516 patients with subchorionic hemorrhage and vaginal bleeding, concluded the outcome depends on the size of hematoma, maternal age and gestational age at the time of diagnosis.

In the study group, 10% had spontaneous abortions, 26% had preterm deliveries and 63% had full term deliveries. In the control group, 10% had spontaneous abortion, 16% had preterm deliveries and 73% had full term deliveries.

A similar study conducted by Yavuz Emre Sukur et al² in the year 2014 and he observed that there was no statistically significant increase or decrease in

abortions in patients diagnosed with subchorionic hemorrhage.

In the study group, 1 out of 21 patients (5%) with mild SCH had undergone subchorionic hemorrhage while 20 out of 21(95%) reached viability, 7 had preterm deliveries while 13 had full term deliveries. Among 6 patients with moderate degree of subchorionic hemorrhage, 1 (17%) had spontaneous abortion while 5 (83%) reached viability, 1 delivered preterm while 4 delivered at full term. Among 3 patients with severe degree of subchorionic hemorrhage, 1(33.3%) had spontaneous abortion and 2(66.7%) delivered at full term.

In the study group, it was noted that 5 out 30 patients had increase in the size of hematoma. Of the 5 patients, 3 had spontaneous abortions while 1 delivered at preterm and 1 delivered at full term. Decrease in the size of hematoma was noted in 17 patients, of which 6 delivered preterm and 11 delivered at term. The hematoma has resolved completely in 2 weeks time in 8 patients, of which 1 delivered preterm while 7 delivered at term. Hence it can be noted that increase in size of hematoma may lead to spontaneous abortion while decrease in the size may be uneventful.

In the year 2015, the study conducted by J.Kwok et al³ 144 women with subchorionic hemorrhage were taken and size was defined as SH:GS. The study

concluded that larger the size of hematoma, greater the risk of abortion.

In the study group, mean gestational age at the time of delivery was 33.4 weeks while in the control group, mean gestational age at the time of delivery was 38 weeks. There was significant increase in preterm deliveries in the patients with subchorionic hemorrhage detected in the first trimester.

In the study conducted by Dr. Kandichetty Sarada *et al* in 2018, 230 patients with subchorionic hemorrhage have been followed up throughout the pregnancy and the study concluded there was significant increase in the preterm births in patients with subchorionic hemorrhage.

Shari Gelber *et al* also concluded from his study in 2009 that there is increase in the preterm births in patients with subchorionic hemorrhage detected on ultrasound in the first trimester.

Mode of delivery in the study group and control group were similar. In the study group 30% had undergone L.S.C.S while 70% delivered vaginally. In the control group, 33% had undergone L.S.C.S while 67% had delivered vaginally.

In the study conducted by Hashem *et al* from June 2014 to June 2015, observed that there was no difference in the mode of delivery (p value 0.40) due to presence of subchorionic hemorrhage.

In terms of birth weight, 2 out of 27 had birth weight <2kgs in the study group and 7 out of 27 had birth weight >3kg. In the control group, 4 out of 27 had birth weight <2kg while 9 out of 27 had birth weight >3kg. As the preterm births were higher in the study group, NICU admissions (30%) were also higher in the study group. In the control group, NICU admissions were 15%. However all the babies were discharged from NICU within 10 days.

The study conducted by Yavuz Emre Sukur *et al* also concluded that the outcome in terms of gestational age at delivery, birth weight, delivery route in patients with subchorionic hemorrhage are similar to patients without subchorionic hemorrhage.

Conclusion

Therefore we can conclude that the mere presence of subchorionic hemorrhage has no significant effect on the outcome of pregnancy. From the study conducted, it can be concluded that, it is the increase or decrease in size of the subchorionic hematoma with the advancement of pregnancy is a better predictor of outcome than the mere size of hematoma detected in the first trimester ultrasound. Once the period of viability was reached, there was no appreciable difference in the perinatal outcome.

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