Study Of Outcome Of Pregnancies With Subchorionic Hemorrhage In A Tertiary Care Hospital

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Abstract
Background: Subchorionic hemorrhage (SCH) is a common complication of pregnancy, characterized by the accumulation of blood between the uterine wall and the chorionic membrane due to the separation of the chorion from the endometrium. It is often detected incidentally during routine ultrasound scans. While SCH frequently leads to vaginal bleeding and anxiety regarding pregnancy outcomes, its clinical significance and impact on pregnancy remain subjects of debate. Some studies have suggested an association between SCH and adverse outcomes like miscarriage, preterm birth, and placental abruption, while others indicate no significant effect.
Aims and Objectives: To measure the prevalencee of subchorionic hemorrhage in antenatal patients. To access the association between subchorionic hemorrhage and outcome such as abortion, preterm birth, intrauterine growth restriction, preterm premature rupture of membrane (PPROM), preeclampsia, antepartum haemorrhage, still birth and mode of delivery.
Methodology: It is a prospective observational study conducted over 6 months at Sree Balaji Medical College and Hospital, including 100 reproductive age female with confirmed pregnancy by purposive sampling method. Data was collected and pregnancy is followed up by standard antenatal visits and their outcome such as abortion, pregnancy complication such as PPROM, preeclampsia, antepartum hemorrhage, still birth. Time and Mode of delivery, Birth weight and neonatal wellbeing the data collected and tabulated. Statistical methods were employed to identify significant pattern and correlations.
Results: In our study the SCH group had a higher proportion of multiparous women (64%) compared to the non-SCH group (42%). This difference in parity distribution between the two groups was statistically significant (p=0.028). In our study also the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labor, PPROM, antepartum hemorrhage, Small for gestational age (SGA), preeclampsia, mode of delivery but these differences were not statistically significant when compared to the non-SCH group.
Conclusions: Despite advancements, gaps remain in understanding the underlying mechanisms, optimal management strategies, and long-term outcomes associated with SCH. Future research should focus on prospective studies evaluating novel treatments, long-term follow-up of affected pregnancies, and identifying biomarkers or predictors of adverse outcomes.

INTRODUCTION:

Subchorionic hemorrhage (SCH) is a common complication during pregnancy, characterized by collection of blood between the uterine wall and the chorionic membrane caused due to chorion separating from endometrium (1,2,3) leading to vaginal bleeding which often leads to anxiety about outcome of pregnancy. It is detected incidentally during routine ultrasound scans, its clinical significance and impact on pregnancy outcomes remain subjects of debate and investigation. This study aims to delve the various aspects of SCH, including its etiology, clinical presentation, diagnostic modalities, and most importantly, its association with adverse pregnancy outcomes such as miscarriage, preterm birth, and intrauterine growth restriction etc.
Pearlstone M et al (4) reported subchorionic hemorrhage or hematoma is a risk factor for spontaneous abortion, particularly when it amounts to 25 percent or more of the volume of the gestation sac. Large hematomas increase risk of miscarriage and other poor pregnancy outcomes e.g., placental abruption, preterm premature rupture of membranes, preterm labour and stillbirth(5). Studies suggested that SCH is associated with an increased risk of miscarriage, preterm birth (PTB), placental abruption, preterm premature rupture of membranes (6) low birth weight, and fetal growth restriction (FGR) (7,8). Some studies show no effect on miscarriage, preterm birth (9,10) or mode of delivery(6)in later pregnancy.

OBJECTIVE:

- To measure the prevalencee of subchorionic hemorrhage in antenatal patients
- To access the association between subchorionic hemorrhage and outcome such as abortion, preterm birth, intrauterine growth restriction, preterm premature rupture of membrane (PPROM), preeclampsia, antepartum haemorrhage, still birth and mode of delivery.

REVIEW OF LITERATURE:

In study of Gunay T et al (11) of 178 pregnant women with sonographically detected SCH in the 1st trimester, and 350 pregnant mothers without SCH as controls. The SCH was divided into three groups on size of hematoma, small SCH was SCH I, medium SCH II and large SCH III. Subchorionic hematoma was associated with significantly lower gestational age at delivery ($p < 0.001$) and higher rate of first trimester bleeding ($p < 0.001$) compared with the control group, regardless of the size of the hematoma. Placental abruption ($p = 0.002$) and early pregnancy loss ($p < 0.001$) were significantly more common in SCH-II and -III groups than in the control group. SCH-III group was associated with a significantly higher rate of < 37 gestational weeks at delivery ($p < 0.001$), first trimester vaginal bleeding ($p < 0.001$), early pregnancy loss ($p < 0.001$), IUGR ($p = 0.003$) and preterm delivery ($p < 0.001$) compared to both lesser size hematoma and control groups.

In study of Naz S et al (12) of 200 patients of <20 weeks singleton pregnancy with threatened miscarriage, were divided into two groups based on the presence (study group) or absence of subchorionic hematoma (control) on basis of ultrasound imaging. Their incidence of subchorionic hematoma was observed to be 30.5%. Most of the patients of SCH and non SCH groups presented in first trimester. Age and BMI were similar for both groups however there were more multigravida patients in the SCH group (63% versus 46.7%, P=0.12). A higher number of patients in the SCH group ended up in spontaneous miscarriage in contrast to patients with no SCH (13% versus 6.1%, P=0.07) and a greater proportion of small for gestational age (SGA) babies (8.9% versus 3.9%) though no statistical significance was observed. There were more preeclampsia patients in SCH group as compared to non SCH group (4.8% versus 0.7%) and the trend was statistically significant(P=0.05). However, no significant correlation of hematoma size and adverse pregnancy outcomes were found in SCH group.

In Nagy S et al (7) study of 187 pregnant women with intrauterine hematomas and 6488 controls in whom hematomas were not detected at first-trimester ultrasonography examination, the incidence of intrauterine hematoma in the first trimester in a general obstetric population was 3.1%. A retroplacental position of the hematoma was significantly correlated with an increased risk for adverse maternal and neonatal complications. The presence or absence of symptoms of threatened abortion did not affect these outcomes. The rates of operative vaginal delivery (relative risk [RR] 1.9; confidence interval [CI] 1.1, 3.2) and cesarean delivery (RR 1.4; CI 1.1, 1.8), as well as the rates of pregnancy-induced hypertension (RR 2.1; CI 1.5, 2.9) and preeclampsia (RR 4.0; CI 2.4, 6.7), were significantly greater in the hematoma group. Placental abruption (RR 5.6; CI 2.8, 11.1) and placental separation abnormalities (RR 3.2; CI 2.2, 4.7) were also significantly more frequent in the hematoma group. Perinatal complications, including the rate of preterm delivery (RR 2.3; CI 1.6, 3.2), fetal growth restriction (RR 2.4; CI 1.4, 4.1), fetal distress (RR 2.6; CI 1.9, 3.5), meconium-stained amniotic fluid (RR 2.2; CI 1.7, 2.9), and neonatal intensive care unit admission (RR 5.6; CI 4.1, 7.6), were also significantly increased in this group. The frequency of intrauterine demise and perinatal mortality was increased in the hematoma group, but this difference did not reach statistical significance (Ps =.6 and.2).

In study of Pederson et al(13) of 566 patients with vaginal bleeding in the first half of pregnancy and in follow up 23 (4%) had a hematoma of greater than or equal to 50 ml at between 12 and 20 weeks gestation. One patient had a miscarriage and two had a preterm delivery.

In study of Sauerbrei E et al (14) of 30 pregnant patients who experienced vaginal bleeding between 10 and 20 weeks gestation, subchorionic hematomas were demonstrated on ultrasound examination. In 18 patients (60%), the margin of the placenta was separated from the uterine wall. In 15 patients the outcome was favorable (full-term delivery of normal infant) and in 15 patients the outcome was unfavorable (seven preterm births, four stillbirths, three spontaneous abortions, one therapeutic abortion). The major prognostic factor related to pregnancy outcome was the volume of the hematoma and the relative volume of the hematoma (volume of hematoma divided by volume of gestational sac). For a volume less than 60 ml, the outcome tended to be favorable, and for a relative volume less than 0.4, the outcome tended to be favorable.

In study of Lykke JA et al (15) retrospective registry-based cohort first-trimester bleeding increased the risk of delivery in weeks 32-36 from 3.6% to 6.1% (odds ratio [OR], 1.65; 95% confidence interval [CI], 1.57-1.77) and in weeks 28-31 from 0.3% to 0.9% (OR 2.98; 95% CI 2.50-3.54) and increased the risk of placental

abruption from 1.0% to 1.4% (OR 1.48; 95% CI 1.30-1.68). First-trimester bleeding in the first pregnancy increased the risk of recurrence in the second pregnancy from 2.2% to 8.2% (OR 4.05; 95% CI 3.78-4.34), preterm delivery from 2.7% to 4.8% (OR 1.83; 95% CI 1.67-2.00), and placental abruption from 0.9% to 1.0% (OR 1.29; 95% CI 1.07-1.56) in the second pregnancy.

In Pearlstone et al (4) review study of fourteen studies, the incidence of SCH varied from 4 to 48 per cent. Small SCH tend to be more common in the first trimester and appear to pose no added risk. Conversely, SCH in the second trimester often are larger and may be associated with an increased risk of preterm delivery.

In study of Jones J et al (16) retrospective, case-control study of 144 women with bleeding in the first trimester and 144 age-matched control subjects. The incidence of adverse pregnancy outcome was significantly (P=.02) higher in women with a history of first-trimester threatened miscarriage than in the control group. The relative risk (RR) of an adverse pregnancy outcome for the study group was 2.22 (95% confidence interval [CI] 1.12, 4.39) compared with the control group. The RR of delivering a baby of less than 1000 g was 4.43 (95% CI 0.5, 39.2) in women with first-trimester threatened miscarriage. This was independent of the presence of an intrauterine hematoma. The RR of MSAFP being raised to more than 2.5 multiples of the median (MoM) in the study group was 6.25 (95% CI 0.77, 50.6). There was no difference between women with threatened miscarriage who had or did not have ultrasound evidence of an intrauterine hematoma.

In study of Maso G et al (17) of 248 cases, 182 were eligible for the study. Clinical complications occurred in 38.5% of the cases (adverse outcome group). Spontaneous abortion (14.3%), fetal growth restriction (7.7%), and preterm delivery (6.6%) were the most frequent clinical conditions observed. Considering the hematoma variables in adverse and favorable outcome groups, there was a significant difference only for gestational age at diagnosis. The median gestational age was significantly lower (P < .02) in the adverse outcome group (7.27, I and III quartiles 6.22-8.78) than in the favorable outcome cases (8.62, I and III quartiles 6.70-9.98). Among clinical conditions, the median gestational age was significantly lower (P = .02) in pregnancies complicated by spontaneous abortion (6.60, I and III quartiles 5.95-8.36) than in cases not ending in a miscarriage (8.50, I and III quartiles 6.70-9.91). The overall risk of adverse outcome was 2.4 times higher when the hematoma was diagnosed before 9 weeks (odds ratio 2.37, 95% confidence interval 1.20-4.70). In particular, intrauterine hematoma observed before 9 weeks significantly increases the risk of spontaneous abortion (odds ratio 14.79, 95% confidence interval 1.95-112.09).

Bennett G L (18) et al retrospective review study of 516 patients with vaginal bleeding, a live fetus, and a subchorionic hematoma in the first trimester. The spontaneous abortion rate was 9.3%. The rate nearly doubled when the separation was large (18.8%) compared with small and moderate hematomas (7.7% and 9.2%, respectively). A large separation was found to be associated with an almost three-fold increase in risk of spontaneous abortion. The spontaneous abortion rate was approximately twice as high for women aged 35 years or older versus younger women (13.8% and 7.3%, respectively) and for women with bleeding at 8 weeks gestation or less compared with those with bleeding at greater than 8 weeks gestation (13.7% vs. 5.9%).

In Bloch C (19) et al study of 31 pregnant women with first-trimester bleeding, all on USG had subchorionic hemorrhage with a living fetus. 26 had normal term pregnancies, 2 premature labor at 31 and 32 weeks, 3 first-trimester missed abortions. No correlation was found between volume of subchorionic bleeding and prognosis. The prognosis of the pregnancy in this group of 31 women with first-trimester bleeding and ultrasonography evidence of subchorionic hemorrhage and fetal cardiac activity was 80% favorable.

In study of Sharma G (20) et al One of 129 pregnancies with a subchorionic echolucency in ultrasound. There were 7 (5.4%) pregnancy losses before 24 weeks and 24 (18.6%) pregnancies complicated by preterm delivery. Of the 122 pregnancies reaching viability, those complicated by antepartum bleeding were more likely to deliver prematurely than those without bleeding, (26.6% vs. 7.0%, P=.009). Maximum area of subchorionic echolucency, gestational age at subchorionic echolucency detection, amniocentesis, maternal age, and parity were not associated with Preterm delivery.

MATERIALS AND METHODS

Study design- prospective observational study

Study population- reproductive age female with confirmed pregnancy

Study area -Department of obstetrics and gynecology of Sree Balaji Medical College and Hospital, Bharath University, Chennai.

Sampling Method: - purposive sampling

Sample size=100

Study period: 6 months
Data analysis method- Data will be entered in Microsoft excel and analysis will be done using SPSS software version 22.

Inclusion criteria-
1. Pregnant women more than 18years.
2. Subchorionic hemorrhage confirmed via ultrasound finding
3. Singleton pregnancies.

Exclusion criteria-
1. Multiple gestations (e.g., twins, triplets).
2. Pregnancies with known fetal abnormalities.
3. Subchorionic hemorrhage is suspected but not confirmed by imaging studies.
4. Unwilling or unable to participate in follow-up assessments or provide consent for their data to be used in research.

METHODOLOGY:
The study will be carried out in patients aged above 18 years of age who are fitting the inclusion criteria for a period of 6 months from antenatal women attending department of obstetrics and Gynaecology outpatient clinic, Causality and ward in Sree Balaji Medical College and Hospital. Informed consent will be obtained. On admission detailed history, examination and relevant investigations will be done. Demographic details along with Patient's medical history will be collected through proforma from study participants (total sample size).Women satisfying the inclusion criteria are assessed in OBG OPD by Professors and Assistant professors who are not guide to the study. Data such as Age, present history, past history , obstetric history such as gravid ,Parity, live children, abortions are collected. The pregnancy is followed up by standard antenatal care such as regular antenatal visits : weeks 4 to 28 : one antenatal visit per month, weeks 28 to 36 : 1 antenatal visit every 2 weeks and weeks 36 to 40 : one antenatal visit every week along with serial Ultrasonography reports done by professionals not part of this study.
Also serial routine antenatal blood investigations and the following outcomes are noted:
1) Abortion, 2) Pregnancy complications such abortion, preterm birth, intrauterine growth restriction, preterm premature rupture of membrane (PPROM), preeclampsia , antepartum hemorrhage ,still birth 3) Time of delivery (gestational age), 4) Mode of delivery (vaginal or operative delivery), 5) Birth weight of the baby, 6) Neonatal wellbeing. The results of the data collected are to be tabulated and analyzed in MS word and Spss2.1

RESULTS :

Table 1:

Variables	Categories	SCH (n=50)	Without SCH (n=50)	p value
		n (%)	n (%)	
Age	18-24	11 (22)	14 (28)	0.823
	25-29	22 (44)	21 (42)	
	30-34	13 (26)	13 (26)	
	>35	4 (8)	2 (4)	
Parity	Primigravida	18 (36)	29 (58)	0.028
	Multigravida	32 (64)	21 (42)	
Gestational Age	First trimester (1-13 weeks)	35 (70)	33 (66)	0.668
	Second trimester (14-26 weeks)	15 (30)	17 (34)	
BMI	<18	3 (6)	2 (4)	0.942
	18-24.9	22 (44)	20 (40)	
	25-29.9	17 (34)	21 (42)	
	30-35	6(12)	5 (10)	
	>35	2 (4)	2 (4)	

The table.1, presents the demographic and clinical characteristics of two groups of pregnant women - those with subchorionic hematoma (SCH) and those without SCH. The sample size for each group is 50.
The age distribution shows, the majority of women in both groups were between 25-29 years old, with 44% in the SCH group and 42% in the non-SCH group. There were slightly more women aged 18-24 in the non-SCH group (28%) compared to the SCH group (22%). The proportion of women aged 30-34 was the same in both

groups (26%), and there were more women aged over 35 in the SCH group (8%) compared to the non-SCH group (4%). However, the difference in age distribution between the two groups was not statistically significant (p=0.823).

Examining the parity of the women, the SCH group had a higher proportion of multiparous women (64%) compared to the non-SCH group (42%). Conversely, the non-SCH group had a higher proportion of primigravida women (58%) compared to the SCH group (36%). This difference in parity distribution between the two groups was statistically significant (p=0.028).

In terms of gestational age, the majority of women in both groups were in their first trimester (1-13 weeks), with 70% in the SCH group and 66% in the non-SCH group. The proportion of women in the second trimester (14-26 weeks) was similar between the two groups (30% SCH, 34% non-SCH). The difference in gestational age distribution was not statistically significant (p=0.668).

Finally, the distribution of BMI categories was similar between the two groups, with the majority of women in both groups having a BMI in the normal (18-24.9) or overweight (25-29.9) range. The difference in BMI distribution was not statistically significant (p=0.942).

Table 2:

Variables	Categories	SCH (n=50) n (%)	Without SCH (n=50) n (%)	p value
Miscarriage	Yes	6 (12)	4 (8)	0.505
	No	44 (88)	46 (92)	
Preterm Labor	Yes	12 (24)	8 (16)	0.317
	No	38 (76)	42 (84)	
PPROM	Yes	7 (14)	3 (6)	0.182
	No	43 (86)	47 (94)	
Antepartum Hemorrhage	Yes	1 (2)	1 (2)	1.000
	No	49 (98)	49 (98)	
SGA	Yes	4 (8)	2 (4)	0.678
	No	46 (92)	48 (96)	
Preeclampsia	Yes	3 (6)	1 (2)	0.617
	No	47 (94)	49 (98)	
Mode of Delivery	SVD	24 (48)	21 (42)	0.760
	LSCS	21 (42)	25 (50)	
	Assisted Vaginal Delivery	5 (10)	4 (8)	

The table.2, outlines the obstetric outcomes of two groups, those with subchorionic hematoma (SCH) and those without SCH.

Considering the rate of miscarriage, the proportion of women who experienced a miscarriage was slightly higher in the SCH group (12%) compared to the non-SCH group (8%). However, this difference was not statistically significant (p=0.505).

Similarly, the SCH group had a higher percentage of preterm labor (24%) compared to the non-SCH group (16%), but once again this difference was not statistically significant (p=0.317). The SCH group also had a higher rate of PPROM at 14% versus 6% in the non-SCH group, yet this was also not a significant difference (p=0.182).

Reviewing other obstetric outcomes, the rate of antepartum haemorrhage was the same in both groups at 2% (p=1.000). The SCH group had a higher percentage of SGA infants at 8% compared to 4% in the non-SCH group, but this was not a statistically significant difference (p=0.678).

Similarly, the SCH group had a higher rate of preeclampsia at 6% versus 2% in the non-SCH group, but this was also not a significant difference (p=0.617). Finally, the rates of spontaneous vaginal delivery, caesarean section, and assisted vaginal delivery were comparable between the two groups, with no statistically significant difference in mode of delivery (p=0.760).

Overall, while the SCH group had numerically higher rates of adverse obstetric outcomes, but these differences were not statistically significant when compared to the non-SCH group.

Table 3:

Variables	Categories	SCH (n=50)	Without SCH (n=50)	p value
		n (%)	n (%)	
Birth Weight	<2.5	34 (6)	11 (22)	0.070
	2.5-3.5	34 (68)	28 (56)	
	>3.5	13 (26)	11 (22)	
Apgar Score	3	0	1 (2)	0.150
	7	3 (6)	3 (6)	
	8	5 (10)	12 (24)	
	9	42 (84)	34 (68)	
NICU Admission	Yes	3 (6)	4 (8)	1.000
	No	47 (94)	46 (92)	

The table.3, outlines the birth outcomes of two groups of pregnant women those with subchorionic hematoma (SCH) and those without SCH. Evaluating birth weight, the SCH group had a higher percentage of infants with birth weight less than 2.5 kg (34%) compared to the non-SCH group (22%). However, the majority of infants in both groups had birth weights in the typical range of 2.5-3.5 kg (68% SCH, 56% non-SCH). There were also similar proportions of infants with birth weight exceeding 3.5 kg in both groups (26% SCH, 22% non-SCH). Despite these numerical variances, the overall distribution of birth weights was not statistically significant between the two groups (p=0.070).

Assessing Apgar scores, the majority of infants in both groups had high Apgar scores of 9 at 1 minute (84% SCH, 68% non-SCH). The SCH group did have a lower percentage of infants with Apgar scores of 8 (10%) compared to the non-SCH group (24%), but the difference in Apgar score distribution was not statistically significant (p=0.150). Additionally, when examining NICU admission, a similar proportion of infants required NICU admission in the SCH group (6%) and the non-SCH group (8%), with the majority in both groups not requiring NICU care (94% SCH, 92% non-SCH). The difference in NICU admission rates was also not statistically significant (p=1.000).

Overall, while the SCH group had some numerical differences in birth outcomes compared to the non-SCH group, but these differences were not found to be statistically significant.

Table 4:

Hematoma Localization	Frequency	Percent	Valid Percent	Cumulative Percent
Anterior	22	44	44	44
Cervical	11	22	22	66
Fundus	8	16	16	82
Posterior	9	18	18	100
Total	50	100	100	

The table.4, shows the distribution of subchorionic hematoma (SCH) localization among the 50 patients in the study.

The most common location for the SCH was the anterior portion of the uterus, occurring in 22 out of the 50 patients (44% of the total).

The next most frequent location was the cervical region, which accounted for 11 cases (22% of the total).

The fundus was the site of the SCH in 8 patients (16% of the total).

Finally, 9 patients (18% of the total) had the SCH located in the posterior portion of the uterus.

The majority of the SCH cases (66%) were located in the anterior or cervical regions of the uterus.

Table 4.1:

Variables	Categories	Anterior (n=23)	Cervical (n=11)	Fundus (n=8)	Posterior (n=9)	p value
		n (%)	n (%)	n (%)	n (%)	
Early Pregnancy Loss	Present	4 (18.18)	1 (9.09)	1 (12.5)	3 (33.33)	0.607
	Absent	18 (81.82)	10 (90.91)	7 (87.5)	6 (66.67)	
IUGR	Present	2 (9.09)	1 (9.09)	1 (12.5)	1 (11.11)	1.000
	Absent	20 (90.91)	10 (90.91)	7 (87.5)	8 (88.89)	
Placental abruption	Present	2 (9.09)	1 (9.09)	1 (12.5)	1 (11.11)	1.000
	Absent	20 (90.91)	10 (90.91)	7 (87.5)	8 (88.89)	

	Present	4 (18.18)	2 (18.18)	1 (12.5)	2 (22.22)	
Preterm delivery	Absent	18 (81.82)	9 (81.82)	7 (87.5)	7 (77.78)	0.965
	Present	3 (13.64)	1 (9.09)	1 (12.5)	2 (22.22)	
Pre-eclampsia	Absent	19 (86.36)	10 (90.91)	7 (87.5)	7 (77.78)	0.881
Gestational	Present	1 (4.55)	1 (9.09)	1 (12.5)	1 (11.11)	
Diabetes	Absent	21 (95.45)	10 (90.91)	7 (87.5)	8 (88.89)	0.812
	Present	0 (0)	1 (9.09)	0 (0)	0 (0)	
IUD	Absent	22 (100)	10 (90.91)	8 (100)	9 (100)	0.560

The table.4.1, shows the frequency and percentage of various obstetric outcomes in four groups based on the location of the SCH - anterior, cervical, fundus, and posterior.
Looking at early pregnancy loss, the posterior SCH group had the highest rate at 33.33%, compared to 18.18% in the anterior group, 12.5% in the fundus group, and 9.09% in the cervical group. However, this difference in early pregnancy loss rates across the groups was not statistically significant (p=0.607).
Regarding intrauterine growth restriction (IUGR), the rates were similar across the groups, ranging from 9.09% to 12.5%, and the differences were not statistically significant (p=1.000).
Similarly, the rates of placental abruption were also comparable, occurring in 9.09% to 12.5% of cases in the different groups, with no significant difference (p=1.000).
The incidence of preterm delivery was highest in the posterior SCH group at 22.22%, followed by 18.18% in the anterior and cervical groups, and 12.5% in the fundus group. Yet, this variation was not statistically significant (p=0.965).
When examining preeclampsia, the posterior SCH group had the highest rate at 22.22%, while the other groups ranged from 9.09% to 13.64%. However, the differences were not statistically significant (p=0.881).
Regarding gestational diabetes, the rates were low and similar across the groups, ranging from 4.55% to 12.5%, with no significant difference (p=0.812).
Finally, the rate of intrauterine death (IUD) was only 9.09% in the cervical SCH group, with no IUD cases observed in the other groups. This difference was also not statistically significant (p=0.560).
In summary, while there were some numerical differences in adverse obstetric outcomes across the SCH localization groups, these differences did not reach statistical significance. The location of the SCH does not appear to be a significant factor in determining pregnancy complications in this study population.

DISCUSSION:

In study of Gunay T et al (11) of 178 pregnant women Subchorionic hematoma was associated with significantly lower gestational age at delivery ($p < 0.001$) and higher rate of first trimester bleeding ($p < 0.001$) compared with the control group. Placental abruption ($p = 0.002$) and early pregnancy loss ($p < 0.001$) were significantly more common in SCH-II and -III groups than in the control group. SCH-III group was associated with a significantly higher rate of < 37 gestational weeks at delivery ($p < 0.001$), first trimester vaginal bleeding ($p < 0.001$), early pregnancy loss ($p < 0.001$), IUGR ($p = 0.003$) and preterm delivery ($p < 0.001$) compared to both lesser size hematoma and control groups.
In our study the SCH group had numerically higher rates of adverse obstetric outcomes, but these differences were not statistically significant when compared to the non-SCH group. This could be due to the regional variations.
In study of Naz S et al (12) of 200 patients of <20 weeks singleton pregnancy with threatened miscarriage, the incidence of subchorionic hematoma was observed as 30.5%. Most of the patients of SCH and non SCH groups presented in first trimester. There were more multigravida patients in the SCH group (63% versus 46.7%, P=0.12). Also higher number of patients in the SCH group ended up in spontaneous miscarriage in contrast to patients with no SCH (P=0.07) and a greater proportion of small for gestational age (SGA) babies (8.9% versus 3.9%) though no statistical significance was observed. There were more preeclampsia patients in SCH group as compared to non SCH group (4.8% versus 0.7%) and the trend was statistically significant(P=0.05). However, no significant correlation of hematoma size and adverse pregnancy outcomes were found in SCH group.
In our study the SCH group had a higher proportion of multiparous women (64%) compared to the non-SCH group (42%). This difference in parity distribution between the two groups was statistically significant (p=0.028). Overall, while the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labour, PPROM, antepartum hemorrhage, SGA, preeclampsia, mode of delivery. But these differences were not statistically significant when compared to the non-SCH group.

In Nagy S et al (7) study of 187 pregnant women with intrauterine hematomas and 6488 controls the incidence of intrauterine hematoma in the first trimester in a general obstetric population was 3.1%. A retroplacental position of the hematoma was significantly correlated with an increased risk for adverse maternal and neonatal complications. The presence or absence of symptoms of threatened abortion did not affect these outcomes. The rates of operative vaginal delivery (relative risk [RR] 1.9; confidence interval [CI] 1.1, 3.2) and cesarean delivery (RR 1.4; CI 1.1, 1.8), as well as the rates of pregnancy-induced hypertension (RR 2.1; CI 1.5, 2.9) and preeclampsia (RR 4.0; CI 2.4, 6.7), were significantly greater in the hematoma group. Placental abruption (RR 5.6; CI 2.8, 11.1) and placental separation abnormalities (RR 3.2; CI 2.2, 4.7) were also significantly more frequent in the hematoma group. Perinatal complications, including the rate of preterm delivery (RR 2.3; CI 1.6, 3.2), fetal growth restriction (RR 2.4; CI 1.4, 4.1), fetal distress (RR 2.6; CI 1.9, 3.5), meconium-stained amniotic fluid (RR 2.2; CI 1.7, 2.9), and neonatal intensive care unit admission (RR 5.6; CI 4.1, 7.6), were also significantly increased in this group. The frequency of intrauterine demise and perinatal mortality was increased in the hematoma group, but this difference did not reach statistical significance (Ps =.6 and.2).

In our study also the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labour, PPROM, antepartum hemorrhage, SGA, preeclampsia, mode of delivery. But these differences were not statistically significant when compared to the non-SCH group. The SCH group had some numerical differences in birth outcomes compared to the non-SCH group, but these differences were not found to be statistically significant.

In study of Pederson et al(13) of 566 patients with vaginal bleeding in the first half of pregnancy and in follow up 23 (4%) had a haematoma of greater than or equal to 50 ml at between 12 and 20 weeks gestation. One patient had a miscarriage and two had a preterm delivery. In our study the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labour, PPROM ,antepartum hemorrhage, SGA, preeclampsia, mode of delivery but these differences were not statistically significant when compared to the non-SCH group.

In study of Sauerbrei E et al (14) of 30 pregnant patients who experienced vaginal bleeding between 10 and 20 weeks gestation, subchorionic hematomas were demonstrated on ultrasound examination. In 18 patients (60%), the margin of the placenta was separated from the uterine wall. In 15 patients the outcome was favourable (full-term delivery of normal infant) and in 15 patients the outcome was unfavourable (seven preterm births, four stillbirths, three spontaneous abortions, one therapeutic abortion). The major prognostic factor related to pregnancy outcome was the volume of the hematoma and the relative volume of the hematoma). For a volume less than 60 ml, the outcome tended to be favourable, and for a relative volume less than 0.4, the outcome tended to be favourable.

In our study the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labour, PPROM, antepartum hemorrhage, SGA, preeclampsia, mode of delivery. But these differences were not statistically significant when compared to the non-SCH group. The SCH group had some numerical differences in birth outcomes compared to the non-SCH group, but these differences were not found to be statistically significant.

Lykke JA (15) et al retrospective registry-based cohort first-trimester bleeding increased the risk of delivery in weeks 32-36 from 3.6% to 6.1% (odds ratio [OR], 1.65; 95% confidence interval [CI], 1.57-1.77) and in weeks 28-31 from 0.3% to 0.9% (OR 2.98; 95% CI 2.50-3.54) and increased the risk of placental abruption from 1.0% to 1.4% (OR 1.48; 95% CI 1.30-1.68). First-trimester bleeding in the first pregnancy increased the risk of recurrence in the second pregnancy from 2.2% to 8.2% (OR 4.05; 95% CI 3.78-4.34), preterm delivery from 2.7% to 4.8% (OR 1.83; 95% CI 1.67-2.00), and placental abruption from 0.9% to 1.0% (OR 1.29; 95% CI 1.07-1.56) in the second pregnancy.

In our study the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labour, PPROM, antepartum hemorrhage, SGA, preeclampsia, mode of delivery. But these differences were not statistically significant when compared to the non-SCH group. The SCH group had some numerical differences in birth outcomes compared to the non-SCH group, but these differences were not found to be statistically significant. These differences could be due to regional variations.

In study of Jones J (16) et al retrospective, case-control study of 144 women with bleeding in the first trimester and 144 age-matched control subjects. The incidence of adverse pregnancy outcome was significantly (P=.02) higher in women with a history of first-trimester threatened miscarriage than in the control group. The relative risk (RR) of an adverse pregnancy outcome for the study group was 2.22 (95% confidence interval [CI] 1.12, 4.39) compared with the control group. The RR of delivering a baby of less than 1000 g was 4.43 (95% CI 0.5, 39.2) in women with first-trimester threatened miscarriage. This was independent of the presence of an intrauterine hematoma. The RR of MSAFP being raised to more than 2.5 multiples of the median (MoM) in

the study group was 6.25 (95% CI 0.77, 50.6). There was no difference between women with threatened miscarriage who had or did not have ultrasound evidence of an intrauterine hematoma. In our study the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labor, PPROM ,antepartum hemorrhage, SGA, preeclampsia, mode of delivery but these differences were not statistically significant when compared to the non-SCH group

In study of Maso (17) et al of 248 cases, 182 were eligible for the study. Clinical complications occurred in 38.5% of the cases (adverse outcome group). Spontaneous abortion (14.3%), fetal growth restriction (7.7%), and preterm delivery (6.6%) were the most frequent clinical conditions observed. Considering the hematoma variables in adverse and favorable outcome groups, there was a significant difference only for gestational age at diagnosis. The median gestational age was significantly lower (P < .02) in the adverse outcome group (7.27, I and III quartiles 6.22-8.78) than in the favorable outcome cases (8.62, I and III quartiles 6.70-9.98). Among clinical conditions, the median gestational age was significantly lower (P = .02) in pregnancies complicated by spontaneous abortion (6.60, I and III quartiles 5.95-8.36) than in cases not ending in a miscarriage (8.50, I and III quartiles 6.70-9.91). The overall risk of adverse outcome was 2.4 times higher when the hematoma was diagnosed before 9 weeks (odds ratio 2.37, 95% confidence interval 1.20-4.70). In particular, intrauterine hematoma observed before 9 weeks significantly increases the risk of spontaneous abortion (odds ratio 14.79, 95% confidence interval 1.95-112.09). In our study the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labor, PPROM,antepartum hemorrhage, SGA, preeclampsia, mode of delivery but these differences were not statistically significant when compared to the non-SCH group

Bennett G L (18) et al retrospective review study of 516 patients with vaginal bleeding, a live fetus, and a subchorionic hematoma in the first trimester. The spontaneous abortion rate was 9.3%. A large separation was found to be associated with an almost three-fold increase in risk of spontaneous abortion. The spontaneous abortion rate was approximately twice as high for women aged 35 years or older versus younger women (13.8% and 7.3%, respectively) and for women with bleeding at 8 weeks gestation or less compared with those with bleeding at greater than 8 weeks gestation (13.7% vs. 5.9%).In our study the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labor, PPROM,antepartum hemorrhage, SGA, preeclampsia, mode of delivery but these differences were not statistically significant when compared to the non-SCH group. These could be due to regional variations.

In Bloch C (19) et al study of 31 pregnant women with first-trimester bleeding, all on ultrasonography had subchorionic hemorrhage with a living fetus. 26 had normal term pregnancies, 2 premature labor at 31 and 32 weeks, 3 first-trimester missed abortions. No correlation was found between volume of subchorionic bleeding and prognosis. In our study the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labor, PPROM,antepartum hemorrhage, SGA, preeclampsia, mode of delivery but these differences were not statistically significant when compared to the non-SCH group

In study of Sharma G (20) et al One of 129 pregnancies with a subchorionic echolucency in ultrasound. There were 7 (5.4%) pregnancy losses before 24 weeks and 24 (18.6%) pregnancies complicated by preterm delivery. Of the 122 pregnancies reaching viability, those complicated by antepartum bleeding were more likely to deliver prematurely than those without bleeding, (26.6% vs. 7.0%, P=.009). Maximum area of subchorionic echolucency, gestational age at subchorionic echolucency detection, amniocentesis, maternal age, and parity were not associated with Preterm delivery. This was similar to our study were the SCH group had numerically higher rates of adverse obstetric outcomes namely miscarriage, preterm labour, PPROM, antepartum hemorrhage, SGA, preeclampsia, mode of delivery. But these differences were not statistically significant when compared to the non-SCH group. The SCH group had some numerical differences in birth outcomes compared to the non-SCH group, but these differences were not found to be statistically significant. The SCH group had a higher proportion of multiparous women (64%) compared to the non-SCH group (42%). Conversely, the non-SCH group had a higher proportion of primigravida women (58%) compared to the SCH group (36%). This difference in parity distribution between the two groups was statistically significant (p=0.028).

Strength and Limitations:

This study provides a comprehensive analysis of subchorionic hemorrhage (SCH) and its association with adverse pregnancy outcomes, contributing valuable insights to the field of obstetrics. By focusing on a well-defined population of pregnant women diagnosed with SCH, the study ensures relevance and specificity. Additionally, the inclusion of key variables such as gestational age, maternal demographics, parity, and neonatal outcomes enables a holistic understanding of the condition. The study's prospective observational design ensures a systematic approach to data collection and follow-up, which strengthens the reliability of the findings. Despite its strengths, this study has some limitations that should be addressed. The single-center

design limits the generalizability of the findings, as the study population may not fully represent other geographic or demographic groups. Additionally, the relatively small sample size may limit the statistical power to detect significant differences in some outcomes, particularly rare complications. The observational design restricts the ability to establish causal relationships between SCH and adverse outcomes, as confounding factors may influence the findings. The exclusion of multiple gestations and pregnancies with known fetal abnormalities narrows the study's applicability, as SCH may have unique implications in these contexts.

CONCLUSION:

Despite advancements, gaps remain in understanding the underlying mechanisms, optimal management strategies, and long-term outcomes associated with SCH. Future research should focus on prospective studies evaluating novel treatments, long-term follow-up of affected pregnancies, and identifying biomarkers or predictors of adverse outcomes.

Conflict of Interest:

The author's confirm that there are no conflicts of interest associated with this study. The research was conducted independently, without any financial, personal, or professional influences that could compromise the integrity of the results. The study was entirely self-funded and the findings reflect an unbiased analysis and interpretation of the data.

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Authors' Contributions:

Saru Sree Mu contributed to preparing the protocol, collecting data, analysing and drafting the manuscript and conceptualizing the whole research. Revathy TG helped in reviewing and revising the manuscript.

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