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STUDY OF THE MATERNAL OUTCOME OF PATIENTS AFFECTED BY THREATENED MISCARRIAGE IN FIRST TRIMESTER.

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ABSTRACT

Introduction: Abortion or miscarriage is the term to denote vaginal bleeding with or without abdominal cramps in early stages of pregnancy, usually 20 to 24 weeks of gestation, which may lead to expulsion of the fetus before it is capable of ex-utero survival. It is of utmost importance to diagnose the condition at the earliest and prevent it from progressing to imminent or complete miscarriage so the purpose of the study was to study the maternal outcome of patients affected by threatened miscarriage in first trimester.

Materials and Methods : 150 patients who came to the hospital in OPD or in emergency casualty with complaints of bleeding per vaginum before 20 weeks and documentation of fetal viability by ultrasound was done were selected for the study. Any incidence of preeclampsia, intrauterine fetal growth restriction, intrauterine fetal death, low birth weight, low lying placenta, placenta praevia or low lying placenta, birth weight was recorded.

Results: Of the 154 patients in the study group, 12 had gestational hypertension and 20 had pre-eclampsia. In the control group, only 5 had gestational hypertension and 6 had pre-eclampsia. There is a significant difference in gestational age , baby weight, APGAR scores, incidence of pre-eclampsia in control group and study group.

Conclusion : The various maternal complications like gestational hypertension, pre-eclampsia, antepartum hemorrhage due to placenta previa have a high incidence in patients with threatened miscarriage. Risk of preterm labour is also significantly increased in these cases with threatened miscarriage. Hence if timely diagnosed & adequately treated, the maternal outcome would improve in cases of threatened miscarriage.

KEYWORDS :

Introduction

Abortion or miscarriage is the term to denote vaginal bleeding with or without abdominal cramps in early stages of pregnancy, usually 20 to 24 [1,2] weeks of gestation, which may lead to expulsion of the fetus before it is capable of ex-utero survival. Abortion may be spontaneous or induced. Since abortion is the term usually used to denote medically or surgically augmented voluntary termination of pregnancy, the term miscarriage is usually used to denote a spontaneous loss of a wanted pregnancy.

Although the exact incidence of threatened miscarriage is difficult to assess due to a large number of cases going unreported, it has been reported to be associated with 20% of clinically confirmed pregnancies[3,4]. It is estimated that around 20-30% of threatened miscarriages may eventually result in loss of pregnancy[5,6]. However, if fetal viability is confirmed, the chances of a live birth are 98%[7].

Women with suspected threatened miscarriage usually present with a history of amenorrhoea, vaginal bleeding, mild pelvic pain. On examination, the cervix is usually closed with a small amount of blood coming through the os and the size of the uterus corresponding to the period of gestation. On ultrasonography, fetal cardiac activity will be demonstrable if the fetus is viable. [8,9,10] There may be some amount of subchorionic bleed or marginal separation of placenta.

It is of utmost importance to diagnose the condition at the earliest and prevent it from progressing to imminent or complete miscarriage.

Even after the episode of threatened miscarriage is managed adequately, there is an increased risk of fetal loss as well as greater incidence of preterm delivery. Other complications such as pre-eclampsia, abruptio placentae, IUGR, placenta previa, malpresentation and retained placenta have been linked to pregnancies continuing after an episode of threatened miscarriage, which may be partly explained by reactive oxygen species and chronic damage to fetal membranes leading to impaired placentation[8]. There is also an association of poor neonatal weight in term pregnancies[9]. First trimester vaginal bleeding has also been associated with an increased risk of congenital malformations in the conceptus[10,11,12]

Therefore, even after the episode of threatened miscarriage has been successfully handled, a close monitoring and follow-up is desirable to ensure optimum maternal outcome.Hence it is very essential to prevent its onset and once occurred, to reassure the couple and the family along with giving adequate treatment so as to have a fruitful maternal outcome.

Materials and Methods :

Patients who came to the hospital in OPD or in emergency casualty with complaints of bleeding per vaginum before 20 weeks and documentation of fetal viability by ultrasound was done were selected for the study. 150 such patients were observed. Similarly 150 patients who did not have vaginal bleeding with viable pregnancy were selected as controls and were observed.

Informed consent was taken from the patients after explaining them the study procedure and their role. Baseline data was recorded by a questionnaire and patient interview as to the amount and duration of bleeding. An ultrasound examination was done to confirm fetal viability by documenting the cardiac activity. The patients were followed up regularly every 3 weekly till 28 weeks, then every 2 weekly till 35 weeks and then every week till 40 weeks. During every antenatal visit, blood pressure was measured, general examination, systemic examination, abdominal examinations were performed. Serial ultrasound monitoring for interval growth was done at 24 weeks, 28 weeks, 32 weeks and at 36 weeks.

Any incidence of preeclampsia, intrauterine fetal growth restriction, intrauterine fetal death, low birth weight, low lying placenta, placenta praevia or low lying placenta, birth weight was recorded. Potential confounding factors of maternal age, gravidity and previous recurrent abortion were identified and adjustments were made in the statistical models. The following pregnancy outcomes between the two groups were compared: abortion, low lying placenta, intrauterine fetal growth restriction, intrauterine fetal death, preterm prelabour rupture of membranes, low birth weight, preeclampsia, congenital anomalies, maternal anemia and postpartum infection, type of delivery.

The following adverse pregnancy outcomes among the two groups were compared: intrauterine fetal growth restriction (estimated fetal weight by ultrasound examination of <10th percentile or birth weight of <10th percentile for gestational age), gestational hypertension

(blood pressure >140/90 mm Hg on at least two occasions >6 hours apart without evidence of chronic hypertension), preeclampsia (criteria for gestational hypertension and significant proteinuria), preterm labor (labor <37 weeks of gestation), preterm prelabour rupture of membranes (membrane rupture <37 weeks of gestation), placental abruption (premature separation of a normally implanted placenta), placenta praevia (placenta completely or partially covering the internal os), low lying placenta (placenta edge actually does not reach the internal os but is in close proximity to it) and mode of delivery[vaginal delivery, forceps, vaccum or caesarean delivery. Both the groups were compared by chi-square test. All P values are reported.

Results

The study showed that there is no significant difference between the two groups.The number of delivery cases in control group were 150 and that in study group were 154. There was no significant (0.9010) difference between mean age of the two groups.

There is a significant difference in gestational age in control group and study group. The mean difference is 2.204 with 95% confidence interval as (1.829 , 2.579). The mean difference in gestational age may be 1.75 weeks. That is it may take 1.75 weeks more to deliver for the subject in the control group. There is a significant difference in baby weight in control group and study group. The mean difference is 0.599 with 95% confidence interval as (0.5058, 0.6937). There is a significant difference in APGAR scores in control group and study group. The mean difference is -0.1574 with 95% confidence interval as (-0.2847 , -0.0301).

Table 1: Pregnancy Induced Hypertension in two groups

Pregnancy Induced Hypertension * Group Crosstabulation

			Group		Test for Comparison of Proportions	Total
			CONTROL	STUDY		
Pregnancy Induced Hypertension	Gestational Hypertension	Count	5	12		17
		% within Group	3.3%	7.8%	0.0855	5.6%
	No	Count	139	122		261
		% within Group	92.7%	79.2%	0.0017 *	85.9%
	Pre-eclampsia	Count	6	20		26
		% within Group	4.0%	13.0%	0.0046 *	8.6%
Total		Count	150	154		304
		% within Group	100.0%	100.0%		100.0%

* Significantly different at 5% level of significance

Of the 154 patients in the study group, 12 had gestational hypertension and 20 had pre-eclampsia. In the control group, only 5 had gestational hypertension and 6 had pre-eclampsia. The study showed that the difference in the incidence of pre-eclampsia in both the groups is statistically significant.

Out of 154 patients in the study group, 90 presented as preterm labour i.e. 58%. One had preterm premature rupture of membranes. As against, the control group had 22 patients presenting with preterm labour i.e.22%. The difference is statistically significant.

The study shows that majority of the patients in study group presented with preterm labour between 32.1 weeks to 34 weeks and from 34.1 weeks to 36 weeks, the respective percentages being 27% & 27%. This is significantly different than those in control groups, where there are 7% in 32.1-34 weeks and 9% presenting in 34.1-36 weeks. Out of 154 patients in study group, none had postpartum haemorrhage. However, 5 patients in control group out of 150 had postpartum haemorrhage.

Of the 154 patients in study group, 80 underwent normal vaginal delivery, 5 required forceps delivery, 4 required vaccum delivery, 65 required caesarean section. As against, 71 underwent normal vaginal delivery, 8 required forceps delivery, 10 required vaccum delivery and remaining 61 out of 150 needed caesarean section. There is not much diffrence in the various modes of delivery.

Discussion

Our literature search identified one previous meta-analysis by Ananth and Savitz,[81] which evaluated the effect of vaginal bleeding up to 28 weeks and focused on perinatal outcomes only. This systematic review included 28 studies published between 1950 and 1992 and found that vaginal bleeding was associated with increased risk of low birth-weight, preterm birth, stillbirth, perinatal death and con- genital malformations in infants. However, with changes in practice and advances in medical technology, the limit of viability is now 20 weeks (World Health Organization) or 24 weeks (UK) and therefore the 28-week cutoff used is no longer compatible with the current practice as there would be overlap between exposure and outcome with this approach. [13,14]

One study was conducted in 2007 where a total of 600 records with complete antenatal, birth, and pediatric outcome were available for review. [15,16] The control group consisted of 450 (75%) patients and the bleeding group consisted of 150 patients (25%). Main outcome measures included gestational age and weight at delivery as well as incidence of adverse pregnancy outcome such as preterm labor, preterm prelabor rupture of membranes (PPROM), placental abruption, and low birth weight (LBW). No significant difference in the incidence of IUGR , preeclampsia , gender, type of delivery , IUFD or placenta previa between the control group and subjects with first-trimester vaginal spotting was noted. Statistically significant differences were noted in these complications: preterm delivery

Another study[17] was evaluated the association of first-trimester bleeding without miscarriage and complications later in the first pregnancy as well as in the next pregnancy. In a retrospective, registry-based cohort study, they identified women delivering in with a first singleton pregnancy (n 782,287) and first and second singleton pregnancies (n 536,419). First-trimester bleeding increased the risk of delivery in weeks 32–36 from 3.6% to 6.1% and in weeks 28–31 from 0.3% to 0.9% and increased the risk of placental abruption from 1.0% to 1.4%.Threatened miscarriage not only increases the risk of subsequent inevitable abortion but also has predisposition for certain risk factors. The various maternal complications like gestational hypertension, pre-eclampsia, antepartum hemorrhage due to placenta previa have a high incidence in patients with threatened miscarriage. Risk of preterm labour is also significantly increased in these cases with threatened miscarriage. Hence if timely diagnosed & adequately treated, the maternal outcome would improve in cases of threatened miscarriage.

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