Original Article

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Maternal outcome of Patients Affected by Threatened Miscarriage in First Trimester at Bhuj, Kutch, Gujarat

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Abstract

Background and Aim: 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 ofex-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:* Present Study was Performed at Department of Gynaecology, Gujarat Adani Institute of Medical Science, Bhuj , Kutch, Gujarat. 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: Bhuj; Hypertension; Miscarriage; Pre-Eclampsia.

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Introduction

Abortion or miscarriage is the term to denote vaginal bleeding with orwithout abdominal cramps in early stages of pregnancy, usually 20 to24 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 [1,2].

Although the exact incidence of threatened miscarriage is difficult toassess 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, iffetal viability is confirmed, the chances of a live birth are 98% [7].

Women with suspected threatened miscarriage usually present with ahistory 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 preeclampsia, abruptio placentae, IUGR, placenta previa, mal presentation and retained placenta have been linked to pregnancies continuing after an episode of threatened miscarriage, which may bepartly explained by reactive oxygen species and chronic damage tofetal 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 increasedrisk of congenital malformations in the conceptus [10,11,12]. Therefore, even after the episode of threatened miscarriage has beensuccessfully handled, a close monitoring and follow-up is desirable toensure optimum maternal outcome. Hence it is very essential to preventits onset and once occurred, to reassure the couple and the family alongwith giving adequate treatment so as to have a fruitful maternaloutcome.

Materials and Methods

Present Study was Performed at Department of Gynaecology, Gujarat Adani Institute of Medical Science, Bhuj , Kutch, Gujarat. Patients who came to the hospital in OPD or in emergency casualty with complaints of bleeding per vaginum before 20 weeks anddocumentation of fetal viability by ultrasound were done were selectedfor 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 thestudy procedure and their role. Baseline data was recorded by aquestionnaire 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 werefollowed up regularly every 3 weekly till 28 weeks, then every 2weekly till 35 weeks and then every week till 40 weeks. During everyantenatal 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, placentapraevia or low lying placenta, birth weight was recorded. Potentialconfounding factors of maternal age, gravidity and previous recurrentabortion were identified and adjustments were made in the statisticalmodels. The following pregnancy outcomes between the two groupswere compared: abortion, low lying placenta, intrauterine fetal growthrestriction, intrauterine fetal death, preterm prelabour rupture ofmembranes, low birth weight, preeclampsia, congenital anomalies,maternal anemia and postpartum infection, type of delivery.

The following adverse pregnancy outcomes among the two groupswere compared: intrauterine fetal growth restriction (estimated fetalweight by ultrasound examination of <10th percentile or birth weightof <10th percentile for gestational age), gestational hypertension(blood pressure >140/90 mm Hg on at least two occasions >6 hoursapart without evidence of chronic hypertension), preeclampsia (criteria for gestational hypertension and significant proteinuria),preterm labor (labor <37 weeks of gestation), preterm prelabourrupture of membranes (membrane rupture <37 weeks of gestation), placental abruption (premature separation of a normally implanted placenta), placenta praevia (placenta completely or partially coveringthe internal os), low lying placenta (placenta edge actually does notreach 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 thetwo groups. The numbers 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 andstudy group. The mean difference is 2.204 with 95% confidence interval as (1.829 , 2.579). The mean difference in gestational age maybe 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 babyweight in

control group and study group. The mean difference is 0.599 with 95% confidence interval as (0.5058, 0.6937). There is asignificant difference in APGAR scores in control group and studygroup. The mean difference is -0.1574 with 95% confidence interval as (-0.2847, -0.0301).

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. Asagainst, the control group had 22 patients presenting with pretermlabour i.e. 22%. The difference is statistically significant.

The study shows that majority of the patients in study group presentedwith preterm labour between 32.1 weeks to 34 weeks and from 34.1weeks to 36 weeks, the respective percentages being 27% & 27%. Thisis 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 difference in the various modes of delivery.

Table 1: Pregnancy Induced Hypertension in two groups

	Control Group Number (%)	Study Group Number (%)	P value
Pregnancy induced Hypertension	139 (92.7)	122 (79.22)	0.001*
Gestational Hypertension	5 (3.3)	12 (7.8)	0.08
Pre-ecalmpsia	6 *(4)	20 (13)	0.004*
Total	150	154	

* indicates statistically significance at pd"0.05

Discussion

Our literature search identified one previous meta-analysis by Ananthand Savitz, which evaluated the effect of vaginal bleeding up to 28weeks and focused on perinatal outcomes only. This systematic review included 28 studies published between 1950 and 1992 and found thatvaginal bleeding was associated with increased risk of low birthweight preterm birth, still birth, perinatal death and con- genital malformations in infants. However, with changes in practice andadvances 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 inthe 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 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 placentaprevia 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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