ISSN: 0975-3583,0976-2833 VOL15, ISSUE 07, 2024

ORIGINAL RESEARCH

Pregnancy outcome in threatened abortion

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Received Date: 10 February, 2024 Accepted Date: 15 April, 2024

Abstract

Introduction- Patients experiencing threatened abortion are at risk of bad pregnancy outcomes due to the potential for difficulties during pregnancy and birth. The present study was done to assess the threatened abortions among women and to evaluate their pregnancy outcome.

Material and methods- The present cross sectional study was conducted in the department of obstetrics and gynaecology at SMGS Hospital among 100 women with the symptoms suggestive of threatened abortion in first trimester of pregnancy during the study period of one year. Maternal and fetal outcomes were measured. The statistical analyses were conducted using SPSS 25.0 for Windows.

Results – Mean parity was 2.1 in study group and 2.2 in control group. Mean gestational age at the time of presentation in weeks was 13.2 in study group and 13.3 in control group. Mean of previous abortions was 0.67 in study group and 0.66 in control group. Average duration of bleeding in days was 4.7 in study groups whereas no sign of bleeding was found in any case of control group. Results were non significant with p value>0.05. Significant results ($p<0.05$) were obtained with respect to abortion rate, preterm birth and mean birth weight of infant.

Conclusion –Threatened abortion is linked to a higher occurrence of negative pregnancy outcomes. The risk is particularly heightened in cases of premature rupture of the membranes, preterm delivery, and low neonatal birth weight.

Keywords – Abortions, Adverse Effects, Pregnancy, Outcome, Threatened Miscarriage

Introduction

Abortion refers to the termination of pregnancy occurring before reaching 20 weeks of gestation (age of viability) or with a fetus that weighs less than 500 grams [1]. Pregnancy-related complications are prevalent, affecting 15-20% of ongoing pregnancies [2]. The clinical diagnosis of threatened miscarriage is made when there is a bloody vaginal discharge or bleeding that occurs through a closed cervical os and ultrasound shows viable fetus in the early half of pregnancy [1]. Approximately 90-96% of pregnancies that exhibit both fetal heart activity and vaginal bleeding between 7-11 weeks do not result in a miscarriage. A higher success rate is linked to bleeding occurring towards the end of the gestational age range of 7 to 11 weeks [3]. After the bleeding has stopped, these pregnancies are not considered high risk and do not require further monitoring. Ultrasound has revolutionized the diagnosis and treatment of miscarriage. Every woman who suffers from bleeding in the early stages of pregnancy is provided with an ultrasound examination to determine the viability of the pregnancy, the position of the placenta, and to check for the presence or absence of a

ISSN: 0975-3583,0976-2833 VOL15, ISSUE 07, 2024

subchorionic hematoma. This condition is linked to a miscarriage rate ranging from 4% to 33% [4].

Pregnancy complications such as preeclampsia, intrauterine growth retardation (IUGR), low birth weight (LBW), and abruptio placentae are linked to issues with the placenta. As a result, the likelihood of experiencing these abnormalities rises in the later stages of pregnancy, increasing the chance of miscarriage and other adverse outcomes [5-7].

Several authors have noted a growing likelihood of fetal demise, specifically spontaneous abortion, as mother's age increases [8,9]. The correlation between the mother's age and the higher probability of chromosomal abnormalities is demonstrated by the age-dependent rise in trisomy 21 and the examination of pre-implantation embryos by cytogenetic tests [10]. Previous obstetric history is an important factor that determines the risk of pregnancy loss. The incidence of clinical miscarriage in young women who have never experienced a loss is as low as 5% [11]. The probability of experiencing three or more losses climbs to roughly 30% for women who have previously given birth to a live newborn, and up to 50% for those who have not had a livebirth [12,13]. It is anticipated that around 33% of women who experience recurrent miscarriage will have experienced three consecutive sporadic miscarriages due to random chance [14]. Factors such as high BMI, anaemia, and TORCH infection can also contribute to pregnancy loss.

The present study was done to assess the threatened abortions among women and to evaluate their pregnancy outcome.

Material and methods

The present cross sectional study was conducted in the department of obstetrics and gynaecology at SMGS Hospital among women with the symptoms suggestive of threatened abortion in first trimester of pregnancy during the study period of one year. Ethical clearance was taken from institutional ethics committee before commencement of the study. Patients were asked to sign an informed consent form after explaining them the complete procedure.

A total of 100 women were selected on the basis of inclusion and exclusion criteria. Same number of controlled cases with normal pregnancy was taken for comparison between the two groups.

Inclusion criteria

1. Pregnant women with complain of one or more of the symptoms of abortion like spotting, bleeding, abdominal pain in first trimester of pregnancy.
2. Patients diagnosed with threatened abortion.

Exclusion criteria

1. Patients below the age of 18 years
2. Patients not willing to participate in the study.
3. Patients with bleed per vaginum with missed abortion/incomplete abortion.
4. Patients with implantation bleeding
5. Multiple pregnancy with one vanishing twin
6. Patients with molar pregnancy
7. Patients with ectopic pregnancy
8. Patients with history of MTP pill intake
9. Patients with low lying placenta
10. Patients with bleeding disorders.

The threatened miscarriage was characterized as a pregnancy in which there is noticeable vaginal bleeding, but no widening of the cervix, and with the presence of fetal heartbeats as detected by ultrasound (USG). The gestational age was established based on either the most

ISSN: 0975-3583,0976-2833 VOL15, ISSUE 07, 2024

recent menstruation history or by measuring the length from the crown to the rump during the first trimester. Pregnancies with a length of fewer than 20weeks or less were considered as nulliparous.

The patients who fulfilled the inclusion criteria were kept for short stay in the hospital and were put on pelvic rest and oral/vaginal progesterone depending upon the ease of the patient. The patients were sent home once the symptoms of bleed per vaginum and/or abdominal cramps settled. They were followed up in OPD as well as IPD with routine investigations and ultrasounds till the delivery of the fetus or the final outcome. The data regarding the pregnancies were obtained from the hospital's records including the delivery room. Infants with a birth weight less than 2.5 kg were classified as having low birth weight (LBW), while those with a birth weight greater than 4 kg were diagnosed with macrosomia. Pregnancies that led to births occurring prior to the 37th week of gestational age were classified as preterm pregnancies, whereas newborns born without a heartbeat after the 20th week of gestation were considered stillbirths. Pregnancies characterized by chronic nausea and vomiting, along with ketone positive and a 5% reduction in weight during the first trimester, were diagnosed as hyperemesis gravidarum.

The results were displayed in the form of frequencies and percentages. For this investigation, normality tests suitable for the number of pregnancies were selected. The normal distribution was considered acceptable when the p-value was greater than 0.05. Data that followed a normal distribution were reported as the mean plus or minus the standard deviation. Data that did not follow a normal distribution were reported as the median along with the minimum and maximum values. A t-test was used for independent samples with parametric distributions, while a Mann-Whitney U-test was employed for independent samples with non-parametric distributions. The Chi-square test was employed to analyze categorical variables across different groups. Logistic regression models were utilized to analyze the complications that were statistically found to be linked with first trimester hemorrhage. The outcomes were then given as odds ratio (OR) with a 95% confidence interval (CI). Significance was attributed to p-values less than 0.05. The statistical analyses were conducted using SPSS 25.0 for Windows.

Results

In the present study the mean age of patients in study group was 32.34 years whereas in control group was 29.21 years. Mean parity was 2.1 in study group and 2.2 in control group. Mean gestational age at the time of presentation in weeks was 13.2 in study group and 13.3 in control group. Mean previous abortions was 0.67 in study group and 0.66 in control group. Average duration of bleeding in days was 4.7 in study groups whereas no sign of bleeding was found in any case of control group as shown in table 1. None of the comparison was statistically significant (p>0.0.5).

Table 1 Demographic and maternal data of patients

Characteristics	Study group	Control group	P value
Mean Maternal age	32.34 ±4.6	29.21±5.2	0.054
Mean parity	2.1±1.0	2.2±1.2	0.067
Mean gestational age (weeks)	13.2±2.1	13.3±1.4	0.210
Mean of previous abortions	0.67±0.2	0.66±0.3	0.432
Mean bleeding duration (days)	4.7±1.8	-	-

Women with threatened abortions had a significantly greater rate of unfavorable pregnancy outcomes compared to the control group. The pregnancy outcomes for both groups are displayed in Table 2. The incidence of miscarriage was substantially greater in the group of

ISSN: 0975-3583,0976-2833 VOL15, ISSUE 07, 2024

women with threatening miscarriage in first compared to the control group, with rates of 17% and 1% respectively (p=0.001). Our research revealed that women experiencing threatened miscarriage had a considerably higher likelihood of premature labor (occurring before 37 weeks of gestation) compared to the control group (15% vs 2%, p=0.01). Women who experienced threatened miscarriage had a substantially higher proportion of newborns weighing less than 2.5 kg compared to the control group. Additionally, the mean birth weight for women with threatened miscarriage was 2.3kgs, while the mean birth weight for the control group was 3.2 kgs.

There were no notable variations in the occurrence of premature rupture of membranes (PROM), intrauterine growth restriction (IUGR), preeclampsia, or placenta-related issues.

Table 2 Comparison of pregnancy outcome between groups

Characteristics	Study group	Control group	P value
Abortion (Missed, Incomplete, Complete)	17	1	0.001
Preterm birth	15	2	0.001
Mean fetal birth (kg)	2.3±1.1	3.2±0.45	0.001
PROM	7	4	0.432
Hypertensive disorder	6	4	0.612
Abruptio placenta	3	2	0.056
IUGR	12	2	0.068
C-section	23	22	0.071

Discussion

While about 15-20% of all pregnancies are at risk of miscarriage in the first trimester, there is a lack of information in the literature regarding the potential difficulties that may arise during the post-diagnosis gestational weeks of these pregnancies [2].The present study was done to assess the threatened abortions among women and to evaluate their pregnancy outcome.

Bleeding during the initial stages of pregnancy is a frequently reported gynecological issue. The data indicated that individuals experiencing threatening miscarriage had a notably higher likelihood of experiencing complete abortion, premature labor, and giving birth to infants with low birth weight. Additional pregnancy problems such as abruption, intrauterine growth restriction (IUGR), pregnancy-induced hypertension (PIH), premature rupture of membranes (PROM), and cesarean section rates showed a little increase, although not to a statistically significant extent. The statistics indicate that the likelihood of a favorable outcome in threatened abortion, after confirming positive cardiac motion on sonography, was 83.1%. Goldstein et al, Batzofin et al, and Ball RH et al have previously published similar evidence [15-17].The survival rate remained unchanged, which can be attributed to the consistently effective therapy with progesterones and bed rest, supported by low-quality data.

Our investigation found that, in line with previous research, the average age of pregnancies at risk of miscarriage was significantly greater than that of the control group [18,19]. The literature presents conflicting findings regarding the association between parity and the risk of miscarriage [20]. The variations in the outcomes can be attributed to disparities in geographical and cultural circumstances, as well as the distinct criteria employed by different researchers in selecting control groups. Pregnancies at risk of miscarriage in the first trimester had lower mean gestational age and mean birth weight compared to pregnancies without the risk of miscarriage. Based on past research, it is reasonable to anticipate that pregnancies with a risk of miscarriage would have a lower average gestational week and average birth weight compared to pregnancies without this risk [21,22].

ISSN: 0975-3583,0976-2833 VOL15, ISSUE 07, 2024

In this study, there was a higher incidence of unsatisfactory results for babies born prematurely (before 37 weeks of gestation) and with low birth weight in the threatened abortion group. Preterm labor and preterm rupture of membranes can be regarded as interconnected phenomena due to their overlapping nature. The low birth weight seen in the study cases is a direct result of preterm birth and maybe inadequate prenatal care. All of the aforementioned adverse pregnancy outcomes appear to be direct results of PROM. There is evidence suggesting that later pregnancy difficulties, such as preterm labor and premature rupture of the membranes, may be caused by poor placentation and, more recently, reactive oxygen species resulting from early pregnancy damage. This assumption is likely a risk factor rather than an etiological element, as it does not account for cases of premature rupture of the membranes and preterm labor observed in patients with non-threatened miscarriage. Thus, it is possible that additional factors are accountable for the occurrence of late pregnancy complications observed in the group with threatened miscarriage [23,24].

Conclusion

Threatened abortion is linked to a higher occurrence of negative pregnancy outcomes. Patients experiencing threatened abortion with the sole symptom of vaginal spotting have a favorable prognosis for maintaining the pregnancy. Additionally, it was observed that the number of patients rise in correlation with advancing age, however the outcome did not demonstrate statistical significance. The precise etiology of abortion remains a subject of debate, however certain factors have been found to be associated with elevated incidence of abortion. There is a possibility that multiple processes are involved in the development of this illness.

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ISSN: 0975-3583,0976-2833 VOL15, ISSUE 07, 2024

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