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Clinical Profiles, Conservative Management, Infection Rate and Outcomes of Threatened Abortion Cases attended at Tertiary Teaching Hospital in Bangladesh

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Abstract

Background: Management of threatened abortion is very important among the pregnant women. **Objective:** The purpose of the present study was to assess the clinical profiles, conservative management and outcomes of threatened abortion. **Methodology:** This cross-sectional study was done in the Department of Obstetrics & Gynaecology at Rajshahi Medical College Hospital, Dhaka, Bangladesh from January 2004 to December 2004 for a period of one year. Patients admitted with the history of pregnancy with per vaginal bleeding before 20 weeks without having any cervical effacement or dilatation were included in this study group. The clinical profiles, conservative management and outcomes of threatened abortion cases were recorded from the study population. **Results:** The threatened abortion was reported at all stage of reproductive age. Women between 20 to 30 years had constituted the largest age group (58.0%). Most of the patients (82 among the 100) were multi gravidas with only 18 who were pregnant for the first time. Most of the patients (48.0%) are of 8 to 12 weeks of gestation. However, 12 to 16 weeks period f gestation was reported in 48.0% cases. Less than 30% of hemoglobin was reported in 20.0% cases. However, 30.0% to 40.0% hemoglobin was recorded in 16.0% cases. Furthermore, 40.0% to 50.0% hemoglobin was reported in 60.0% cases. Urinary tract infection was reported in 7.0% cases. **Conclusion:** In conclusion threatened abortion is most commonly reported in early gestation of age with low hemoglobin with bad obstetrical outcomes.

Keywords: Clinical profiles; conservative management; outcomes; threatened abortion

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Introduction

Abortion is the termination of a pregnancy before the foetus has attained the ability to survive independently outside the uterus[1]. Age at which a foetus is considered viable is not completely agreed upon by obstetricians. It was formerly thought that the foetus has almost no chance of surviving if it weighs less than 1000 grams or if the pregnancy is of less than 28 weeks of duration[2]. Today with modem paediatric care, a less mature foetus may also survive and the legal convention of viability needs revision. Abortion is variously defined as the expulsion or extraction of a foetus (embryo) weighing less than 500g equivalent to approximately 20 to 22 weeks gestation[3].

The most common investigation usually done are hemoglobin, blood grouping and Rh typing, urine for pregnancy test and ultrasonography[4-6]. Sonographic evidence of normal foetal cardiac activity in the patient with first trimester vaginal bleeding indicates a low risk for abortion[4]. The prognosis of threatened abortion is very unpredictable-whatever method of treatment is employed either in the hospital or at home. In about

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two third cases the pregnancy continues beyond 28 weeks[7]. In the rest it terminates either inevitable or missed abortion. If the pregnancy continues there is increased frequency of preterm labour, placenta praevia, IUGR (intrauterine growth retardation) of the foetus and fetal anomalies[8].

There is no specific treatment for threatened abortion. But traditionally confinement to bed, uterine sedatives, hormonal treatment may be given[9]. Empirically there is no role of hormone therapy but undiagnosed deficiency can be corrected; however, 17 hydroxy progesterone caproate may be given as hormonal treatment[10]. Aspirin may be given upto 37 to 38 weeks of gestation to improve placental circulation. Folic acid may be used to prevent neural tube defect. Vitamin E may be of beneficial effect but has got be scientific role. The purpose of the present study was to assess the clinical profiles, conservative management and outcomes of threatened abortion.

Methodology

Study Settings and Population: This cross-sectional study was done in the Department of Obstetrics & Gynaecology at Rajshahi Medical College Hospital, Dhaka, Bangladesh from January 2004 to December 2004 for a period of one year. Patients admitted with the history of pregnancy with per vaginal bleeding before 20 weeks without having any cervical effacement or dilatation were included in this study group. The following criteria were used to label an abortion to be threatened like vaginal bleeding during the first 20 weeks of pregnancy, abdominal cramps may or may not accompany vaginal bleeding and per vaginal examination reveals a cervix that is neither effaced nor dilated.

Study Procedure: Diagnosis of threatened abortion was confirmed from history, clinical examination and ultrasonographic finding of alive fetus. In one year, period 100 cases were selected as study group. The characteristics of all the patients related to their age, gravidity, period of gestation, socioeconomic status, results of routine urine examination, ultrasonographic results, treatment modalities and outcome were determined and data were collected through self-administered structured questionnaire. Socioeconomic status of the patients was reflected by their places of habitations, educational back ground, occupations, and level of income. Medical treatment given to the patients include bed rest, folic acid, Aspirin, uterine sedative like phenobarbitone, hormonal treatment (e.g. Inj. Prolut-N-Depot, Tab. Duphastan) and antibiotics when associated with UTI or RTI.

Statistical Analysis: Statistical analysis was performed by Windows based software named as Statistical Package for Social Science (SPSS), versions 22.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). Continuous data were expressed as mean, standard deviation, minimum and maximum. Categorical data were summarized in terms of frequency counts and percentages. Every efforts were made to obtain missing data.

Ethical Clearance: All procedures of the present study were carried out in accordance with the principles for human investigations (i.e., Helsinki Declaration 2013) and also with the ethical guidelines of the Institutional research ethics. Formal ethics approval was granted by the local ethics committee. Participants in the study were informed about the procedure and purpose of the study and confidentiality of information provided. All participants consented willingly to be a part of the study during the data collection periods. All data were collected anonymously and were analyzed using the coding system.

Results

The threatened abortion was reported at all stage of reproductive age. Women between 20 to 30 years had constituted the largest age group (58.0%) (Table 1).

Table 1: Age Distribution of the 100 cases of Threatened Abortion

Age Groups	Frequency
15 to 20 Years	12
20 to 30 Years	58
30 to 40 Years	24
More than 40 Years	06
Total	**100**

Table 2: Gravidity Distribution of 100 Threatened Abortion Cases

Gravidity	Frequency
1	18
2	06
3	09
4	11
5	29
6	15
6-8	12
Total	**100**

Most of the patients (82 among the 100) were multi gravidas with only 18 who were pregnant for the first time (Table 2).
Most of the patients (48.0%) are of 8 to 12 weeks of gestation. However, 12 to 16 weeks period f gestation was reported in 48.0% cases (Table 3).

Table 3: Period of Gestation at the Time of Admission in 100 cases Threatened Abortion

Period of Gestation	Frequency
8 to 12 weeks	48
12 to 16 weeks	39
16 to 20 weeks	13
Total	**100**

Less than 30% of hemoglobin was reported in 20.0% cases. However, 30.0% to 40.0% hemoglobin was recorded in 16.0% cases. Furthermore, 40.0% to 50.0% hemoglobin was reported in 60.0% cases (Table 4).

Table 4: State of Anaemia in 100 Threatened Abortion Patients

Hb% in Blood	Frequency
Less Than 30	20
30 to 40	16
40 to 50	60
50 to 60	4
Total	**100**

Urinary tract infection was reported in 7.0% cases and the rest of 93.0% cases were free of urinary tract infection (Table 5).

Table 5: Results of Routine Urine Examination

UTI	Frequency
Present	7
Absent	93
Total	**100**

UTI= Urinary Tract Infection

Table 6: Distributions of Complication

Complication		Frequency
Spontaneous Abortion		18
Moderate to Heavy Blood Loss		16
IUD		1
Infection		7
Fetal Outcome in	Preterm Labour	2
Follow Up Cases	Placenta Praevia	12
	IUGR	1
	Fetal anomalies	0
Total		**57**

About 57 cases out of 100 has got complication most of which are preventable (Table 6).
Medical treatment given to the patients include bed rest, uterine sedatives and folic acid in 100.0% cases, hormonal treatment in 96.0% cases, antibiotics in 20.0% and aspirin in 6.0% cases (Table 7).

Table 7: Medical Treatment Received by the 100 patients of Threatened Abortion

Treatment Received	Frequency
Bed rest	100
Uterine sedatives	100
Antibiotics	20
Aspirin	6
Folic Acid	100
Hormonal treatment	96

Uterine sedatives- tablet phenobarbitone or terbutaline. Antibiotics- Cap. Cephalexin or Cap. Amoxycillin. Hormonal treatment- Tab. Duphastan or Inj. Prolut-N depot.

Discussion

Threatened abortion is such an event during pregnancy which needs meticulous attention to fulfill the purpose[10]. Over one-year period of this study, it was found that abortion cases constituted 34 percent of all gynaecological admissions in the Rajshahi Medical College Hospital. This agrees with earlier reports that abortion related cases constitute a large share in the total gynaecological admissions in the teaching hospitals in Bangladesh. It appears that the share of abortion related admissions among all gynaecological admissions has remained more or less same over the years. It was found in this study that 12 percent of abortion related admitted cases had threatened abortion.
Many studies have been completed in the last 10 years to try to determine the etiology of bleeding during pregnancy and to establish ways to prevent this daunting occurrence. They concluded that sometimes trauma such as injuries from an auto-accident or high blood pressure can cause bleeding in early pregnancy. In Great Britain a cohort study was completed to estimate the miscarriage rate of pregnant women and final outcome of pregnancy. Out of 550 women, 117 women experienced bleeding before 20 weeks (21.0%). Out of these 117 cases, 67 ended in miscarriage. In their study the majority of cases of vaginal bleeding were of unknown origin. In this study in 12.5% cases are due to low lying placenta which has been seen as a cause of bleeding. Patients with vaginal bleeding light or heavy are more likely to develop

intrauterine death (IUD), preterm delivery, intrauterine growth retardation (IUGR) and placenta praevia.

Placenta praevia occurs in one out of 200 pregnancies[11]. Women who have had a cesarean section delivery and/or abortion have an increased risk for placenta praevia. It is seen that 44.0% patients are in the first trimester pregnancy[12]. Analysis shows that ultrasound assessment of early pregnancy bleeding is an important part of investigation to find out the causes of threatened abortion. In this study in 12.5% cases low lying placenta is seen as a cause of bleeding[13].

Ultrasound assessment of first trimester bleeding is applied to assess the outcome to the first trimester of pregnancies with vaginal bleeding and the influence of ultrasound-acquired information on care and cost of care[14]. In his study a chart review was performed of 1240 patients receiving care at an integrated medical center for threatened abortion. Record from 715 patients with adequate follow-up data have been reviewed and outcomes studied. Main findings include that on endovaginal ultrasonography, 44.0% of the pregnancies are viable, of which 86.0% continued to the end of the first trimester and that of' 33.0% of pregnancies that are nonviable, 74.0% successfully miscarried without intervention[15].

Threatened abortion is associated with bleeding and/or uterine cramping while the cervix is closed. This stage of abortion may progress to spontaneous incomplete or complete abortion. While this event may be considered a part of the quality control process in human reproduction, it is important to know the possible etiologies and when therapy might prevent pregnancy loss. The World Health Organization estimated that 15.0% of all clinically recognizable pregnancies and is spontaneous abortion, 50.0% to 60.0% of which are due to chromosomal abnormalities[16]. Apart from the fetal factors, several maternal and probably paternal factors contribute to the causes of spontaneous abortion. The maternal factors that may be responsible for abortion include bleeding, local, and systemic conditions such as infections, maternal disease states, genital tract abnormalities, endocrine factors and other miscellaneous causes like anti-phospholipid antibodies, maternal-fetal histocompatibility, excessive smoking and other environmental toxicants and so one[17].

This study shows that most common complication is spontaneous abortion and moderate to heavy blood loss. Urinary tract infection (UTI) in 7.0% and low-lying placenta in 12.5%cases. IUD in 1.0%, IUGR in 1.0% and Preterm labour in 2.0% cases. Thus, threatened abortion is a risk factor for poor pregnancy outcome. In a study threatened abortion has found as a risk factor for poor pregnancy outcome[17].

A large prospective multicenter database[18] has been studied. Subjects have divided into three groups like no bleeding, light bleeding and heavy bleeding. Univariate and multivariable logistic regression analyses are used. The study comprised 16506 patients of which 14160 patients without bleeding, 2094 patients with light bleeding, and 252 patients with heavy bleeding. Patients with vaginal bleeding, light or heavy, were more likely to experience a spontaneous loss before 24 weeks of gestation (odds ratio, 2.5 and 4.2, respectively) and cesarean delivery (odds ratio, 1.1 and 1.4, respectively). Light bleeding subjects were more likely to have preeclampsia (odds ratio, 1.5), preterm delivery (odds ratio, 1.3), and placental abruption (odds ratio, 1.6). Heavy vaginal bleeding subject were more likely to have intrauterine growth restriction (odds ratio, 2.6), preterm delivery (odds ratio, 3.6). Ben-Haroush et al16 studied on pregnancy outcome to threatened abortion with subchorinic hematoma (USG) to see the possible benefit of bed-rest. The women who adhered to bed-rest had fewer spontaneous abortions (9.9% vs. 23.3%, P=0.006) and a higher rate of term pregnancy (89 vs. 70.0%, P=0.004) than those who did not.

Kalinka et al[17] studied on the impact of dydrogesterone treatment on pregnancy outcome with threatened abortion patients and the results pregnancy outcome in dydrogesterone-treated threatened aborters did not statistically differ from those in healthy control. Serum progesterone concentrations in control patients, but not those in threatened abortion increased as pregnancy progressed. Following dydrogesterone treatment, initially low PIBF concentrations of threatened abutters increased (P=0.001) to reach the PIBF found healthy controls. These data suggest that by inducing PIBA production, dydrogesterone might improve pregnancy success rates in threatened abortion (PIBF progesterone induced blocking factor).

There is no specific treatment for threatened abortion. But traditionally confinement to bed, uterine sedatives, hormonal may be given. Empirically there is no role of hormone therapy but undiagnosed deficiency can be corrected 17 hydroxy progesterone caproate or dydrogesterone[11]. Aspirin may be given upto 37 to 38 weeks of gestation to improve placental circulation. Folic acid may be used to prevent neural tube defect. It is observed that early and comprehensive prenatal care

can decreases the risk of threatened abortion to some extent. It is preferable to detect and to treat known maternal disorders before conception occurs. Pre-pregnancy folic acid supplement, avoiding environmental hazards such as X-rays and infectious diseases can also decrease the risk of miscarriage in early pregnancy[13]. Treatment modalities include bed rest, uterine sedatives and folic acid in 100.0% cases where as hormonal treatment in 96.0%, antibiotics in 20.0% cases and aspirin in 3.0% cases. Bed rest means complete bed rest for at least 48 hours after all sign and symptoms of threatened abortion disappears.

Conclusion

In conclusion, bleeding in early pregnancy is associated with an increase in perinatal morbidity and mortality. The threatened abortion is a risk factor for poor pregnancy outcome. The endovaginal ultrasonography for the evaluation of early pregnancy bleeding has a significant effect on care decisions and costs. The first-trimester vaginal bleeding is an independent risk factor for adverse obstetric outcome that is directly proportional to the amount of bleeding.

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Conflict of Interest
The authors declared no conflict of interest.

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Authors' contributions
The authors confirm their contribution to the paper as follows: study conception and design: Nahar S, Nahar L. Data collection: Nahar S. Analysis and interpretation of results: Nahar S, Nahar L. Draft manuscript preparation: Moureen A, Ahmed M, Hossain S. All authors reviewed the results and approved the final version of the manuscript..

Data Availability
Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate
Ethical approval for the study was obtained from the Institutional Review Board. As this was a prospective study the written informed consent was obtained from all study participants. All methods were performed in accordance with the relevant guidelines and regulations.

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