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Original Article

Outcome of Threatened Miscarriage at the University College Hospital, Ibadan, Nigeria Between 2016 And 2020

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Abstract

Background: Threatened miscarriage is one of the most common complications of pregnancy and it is a pregnancy-related bloody vaginal discharge or frank bleeding during the first half of pregnancy without cervical dilatation. Threatened miscarriage occurs in 20-25% of ongoing pregnancy with variations based on location, age, number of pregnancies etc. **Objectives**: This study therefore seeks to know the incidence of threatened miscarriage, the eventual outcome of cases of threatened miscarriage and the factors associated with the continuation of pregnancy after threatened miscarriage occurred between 1st January, 2016 and 31st December, 2020 in the University College Hospital, Ibadan. **Methods**: This was a 5-year retrospective descriptive study analysing the case records of all pregnant women in the gynaecology wards who were admitted for threatened miscarriage between 1st January, 2016 and 31st December, 2020 at the University College Hospital (UCH), Ibadan, Nigeria. The names and hospital numbers of all cases of threatened miscarriage were obtained from the admission registers and the casefiles were retrieved from the Records Department of UCH from which all needed data for the study were collated. The dependent variable was the outcome of the threatened miscarriage. Descriptive statistics were used for variable, Pearson's Chi square or the Fisher's exact test and Independent Students' t-test compared, as applicable, across groups for categorical and continuous data and a *p*-value of < 0.05 interpreted as a statistically significant correlation. Binary logistic regression analyses examined for associations between outcome of the threatened miscarriage and the significant independent variables. **Results**: There were 4,014 gynecology wards admissions of which 320 were cases of threatened miscarriage. This gave an incidence rate of 7.97% (approximately 80 cases of threatened miscarriage per 1000 gynaecology admissions) for threatened miscarriage in UCH for the period studied. Out of the 320cases of threatened miscarriages, 287 (89.69%) casefiles were retrieved, captured and analysed. From these 287cases, 159 (55.4%) had subsequent complete miscarriage (outcome losses), while 107 (37.3%) carried the pregnancy beyond age of viability. There were 21 (7.3%) cases whose outcome could not be traced. 94.6% of those without outcome losses were booked patients (p-value <0.001). Binary logistic regression revealed that light bleeding volume (OR=5.140, *p*-value<0.001) and antenatal booking (OR=7.902, *p*-value<0.001) are factors that increased the chances of continuation of pregnancy after threatened miscarriage occurred in the participants. **Conclusion**: This study shows that the incidence of threatened miscarriage is 7.97% with about 55.4% resulting in pregnancy loss while 37.3% proceeded beyond the age of viability. Women with history of scanty bleeding at presentation and those who had early antenatal booking had increased chances of continuation of pregnancy after occurrence of threatened miscarriage.

Keywords: Threatened miscarriage, outcome loss, continuation of pregnancy, Adverse pregnancy Outcome

Introduction

Threatened miscarriage is one of the most common complications of pregnancy[1, 2]. The terms miscarriage and abortion are sometimes used interchangeably; however, miscarriage is the preferred terminology for spontaneous pregnancy losses while abortion for induced pregnancy loses[3,4]. Miscarriages could be classified as threatened, inevitable, incomplete, complete, missed and septic miscarriages[5]. The World Health Organisation (WHO) defines threatened miscarriage as pregnancy-related bloody vaginal discharge or frank bleeding during the first half of pregnancy without cervical dilatation[6].

Though the true global incidence of spontaneous miscarriage is unknown[7], threatened

miscarriage occurs in 20-25% of ongoing pregnancy [1, 8]. The incidence varies from one location to another and is influence by the age of the mother and a number of pregnancy related factors such as previous history of spontaneous pregnancy losses, intrauterine fetal demise, birth of a child with anomalies etc.[4, 6, 7] Data from some studies showed the incidence of threatened miscarriage in South East Nigeria as 7.7%[9], while in tertiary hospital in south west was 5.7%[10] and 6.8%[11] in a tertiary hospital in the Northern Nigeria.

The causes of early pregnancy losses are most times uncertain.[3, 5,] However, the commonest aetiological factor causing spontaneous miscarriage is chromosomal abnormalities[12]. About 50% of first trimester miscarriages are due to chromosomal abnormality in the fetus of which majority are trisomies and other forms of aneuploidy.[13,3,4] Some other aetological factors include febrile illnesses such as malaria, urinary tract or lower genital tract infections, smoking, alcohol ingestion, chronic medical disorders, uterine abnormalities, trauma, toxins, irradiation and endocrine factors.[4]

The experience of a bleeding episode in early pregnancy can cause lots of anxiety and fear for a couple on the possibility of an adverse pregnancy outcome[2]. The adverse outcomes that are increased in women with threatened miscarriage could be maternal or fetal[1, 3]. There are controversies on threatened miscarriage being classified as high risk pregnancy and about the maternal and fetal outcomes of threatened miscarriage.[14] Some of the maternal adverse outcomes include placenta previa, placenta abruption, manual removal of placenta and increased incidence of caesarean deliveries while some of the adverse fetal outcome includes preterm deliveries, preterm rupture of membranes, intrauterine growth restriction, low birth weight neonates and resultant intrauterine fetal death of early neonatal death.[1, 3-5, 14-16]

This study was therefore aimed at knowing the incidence of threatened miscarriage, the eventual outcome of cases of threatened miscarriage and the factors associated with the continuation of pregnancy after threatened miscarriage has occurred among women admitted into the gynaecological wards at the University College Hospital, Ibadan.

This location is chosen based on professionalism, proximity and easy accessibility for the study. In addition, the last similar study done in this location was in 1992[16] and a more recent study became an advantage for the institution.

Methodology

Study Design: This study was a 5 year retrospective descriptive study[17]. The study analysed the case records of all pregnant women who had threatened miscarriage and admitted into the gynaecology wards between 1st January, 2016 and 31st December, 2020 at the University College Hospital, Ibadan, Nigeria.

Setting: The study setting was the University College Hospital (UCH) [18], Ibadan, Oyo State, Nigeria.

Study Population: The study population were all cases of threatened miscarriages admitted into the gynaecological wards of the University College Hospital from 1st January, 2016 till 31st December, 2020.

Inclusion Criteria: The participants included in this study were all women admitted into the gynaecology wards of UCH between between 1st January, 2019 and 31st December, 2020, having presented with history of vaginal bleeding without the passage of any fleshy material, with or without abdominal pain, in the presence of a closed cervix and a documented intrauterine fetal cardiac activity on ultrasound and a diagnosis of threatened miscarriage made and document before such admission.

Exclusion Criteria: All women with all other forms of miscarriages aside threatened miscarriage and without any intrauterine fetal activity were excluded from the study.

Data Analysis: A quantitative data analysis was done for the data collected using a Statistical Product and Service Solution (SPSS) version 25 to capture the relevant data and analyse the variables.

The dependent variable was outcome of the threatened miscarriage (presence or absence of outcome loss). The independent variables included socio-demographic characteristics (age, parity, occupation, tribe, religion, highest level of education) and previous history and presentation at admission inclusive of previous surgery, previous pregnancy loses, previous uterine evacuation, findings at presentation and ultrasound findings.

Ethical Considerations: We obtained approval for this study from the Department of Obstetrics and Gynaecology, UCH alongside the University College Hospital research ethics committee. Anonymity and confidentiality of record collected was ensured as names were replaced with alphabets, and this was ensured before access to the data. The data collected were kept for the purpose of this study only and will be discarded after a minimum period of 5 years. The data was stored in a password protected computer.

Results

Between 1st January, 2016 and 31st December, 2020 in the University College Hospital (UCH), Ibadan, there were 4,014 gynecology wards admission of which 320 were cases of threatened miscarriage. This gives an incidence rate of 7.97% (approximately 80 cases of threatened miscarriage per 1000 gynaecology admissions) for threatened miscarriage in UCH for the period studied as depicted in in the figure 1 below.

Out of the 320cases of threatened miscarriage found in the gynaecology wards records, 287 casefiles were successfully retrieved, captured and analysed. Implying an 89.69% retrieval rate. From this, 159 (55.4%) had subsequent complete miscarriage, 86 (30%) had term delivery while 21 (7.3%) had preterm delivery. Implying

that 107 (37.3%) carried the pregnancy beyond age of viability. There were 21 (7.3%) cases of threatened miscarriage whose outcome could not be traced mainly due to the patients not re-presenting at the hospital and the patients remained unreachable through their supplied contact phone numbers as at the time of conducting the study.

The outcome of the pregnancies was grouped into two. Group one being those who carried the pregnancy beyond the age of viability (i.e., with no outcome loss) while group two were those with subsequent complete miscarriage (i.e**.,** with Outcome Loss**).** Based on these groups, the statistics in the tables below were derived.

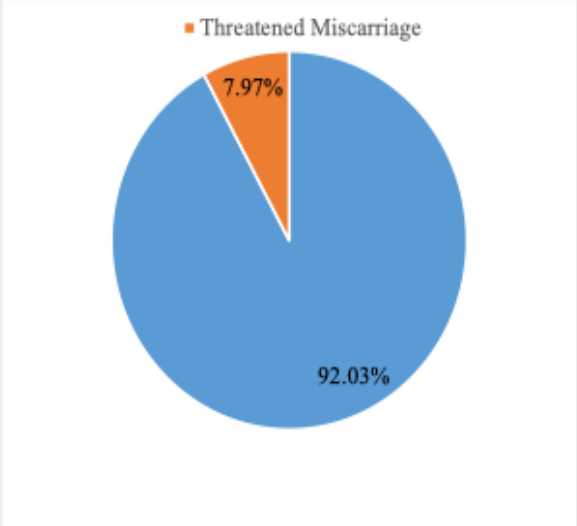

Fig 1: Incidence of Threatened Miscarriage

The table 1 below shows the sociodemographic feature of the cases in the study. Most of the participants were within the age brackets 21years to 40years. The mean ages were similar for both those with outcome loss due to threatened miscarriage and those with no outcome loss and there was no statistical significance (t = 1.328, *p*-value = 0.907). The participants were mainly professionals and 98% of them were married. These had no statistical significance with the outcome of the threatened miscarriage. The participants were dominated by Christians, and 132 (60.3%) of the Christians had loss of the pregnancy while 27 (57.4%) of the Islamic also had outcome loss. This was not statistically significant (χ^2=0.008, *p*-value=0.927). The largest volume of the participants was from the South-west geopolitical region of Nigeria and there was no statistically significant relationship between geopolitical region and outcome of the threatened miscarriage in the participants. (Fisher's Exert Test = 7.340, *p*-value =0.169). The studied population were well educated with 86.5% with tertiary level of education but this showed no statistical significance relationship with the outcome of threatened miscarriage (Fisher's Exert Test = 1.578, *p*-value =0.502).

Table 1: Sociodemographic Characteristics

Variable	Outcome Loss due to Threatened Miscarriage		Test Statistics	*p*-value
	No n=107 n (%)	Yes n=159 n (%)		
Age in years				
≤ 20	1 (100.0)	0 (0.0)	Fisher's Exert Test = 2.320	0.486
21 – 30	44 (43.1)	58 (56.9)		
31 – 40	60 (38.5)	96 (61.5)		
> 40	2 (28.6)	5 (71.4)		
Mean Age ± SD	31.59 ± 4.19	32.35 ± 4.85	t=1.328	0.907
Occupation				
None	12 (50.0)	12 (50.0)	χ^2= 1.091	0.779
Unskilled	19 (38.8)	30 (61.2)		
Skilled	16 (38.1)	26 (61.9)		
Professional	60 (39.7)	91 (60.3)		
Marital Status			Fisher's Exert Test = 1.417	0.234
Single	1 (16.7)	5 (83.3)		
Married	106 (40.8)	154 (59.2)		
Religion				
Christianity	87 (39.7)	132 (60.3)	χ^2= 0.008	0.927
Islamic	20 (42.6)	27 (57.4)		
Geo-Political Region				
North Central	3 (75.0)	1 (25.0)	Fisher's Exert Test = 7.320	0.169
North East	1 (33.3)	2 (66.7)		
North West	3 (100.0)	0 (0.0)		
South East	6 (28.6)	15 (71.4)		
South-South	3 (33.3)	6 (66.7)		
South West	91 (40.3)	135 (59.7)		
Highest Education				
Primary	1 (100.0)	0 (0.0)	Fisher's Exert Test = 1.578	0.502
Secondary	15 (42.9)	20 (57.1)		
Tertiary	91 (39.6)	139 (60.4)		

χ^2 – Chi-square; SD – Standard Deviation; t – Independent Student T-test

The table 2 showed the gynaecological characteristics of the participants in the study. 40% of the participants were nulliparous while 36% has had only one parous experience and 24% were multiparous. 71.8% of the participants were multigravida. However, both parity (χ2 = 0.006, *p*-value=0.997) and gravidity (χ2 = 0.106, *p*-value=0.745) showed no statistical significance with the outcome loss of threatened miscarriage. Previous Surgery (χ2 = 0.001, *p*-value=0.973), Previous Voluntary Termination of Pregnancy (χ2 = 3.517, *p*-value=0.061), Previous Spontaneous Terminations of Pregnancy (χ2 = 0.653, *p*-value=0.419) and Previous uterine instrumentation (χ2 = 0.365, *p*-value=0.546) had no statistical significance with the outcome of threatened miscarriage.

Table 2: Gynaecological Characteristics of the Women with Threatened Miscarriage

Variable	Outcome Loss due to Threatened Miscarriage		χ^2	*p*-value
	No n=107 n (%)	Yes n=159 n (%)		
Parity				
Nulliparous	43 (40.2)	64 (59.8)	χ^2= 0.006	0.997
Primiparous	38 (40.0)	57 (60.0)		
Multiparous	26 (40.6)	38 (59.4)		
Gravidity				
Primigravida	29 (38.7)	46 (61.3)	χ^2= 0.106	0.745
Multigravida	78 (40.8)	113 (59.2)		
Previous Uterine Surgery			χ^2= 0.001	0.973
Yes	18 (40.0)	27 (60.0)		
No	89 (40.3)	131 (59.7)		
Previous VTOP			χ^2= 3.517	0.061
Yes	12 (60.0)	8 (40.0)		
No	95 (38.6)	151 (61.4)		
Previous STOP				
Yes	26 (44.8)	32 (55.2)	χ^2= 0.653	0.419
No	81 (38.9)	127 (61.1)		
Previous Uterine instrumentation			χ^2= 0.365	0.546
Yes	22 (44.0)	28 (56.0)		
No	85 (39.4)	131 (60.6)		

χ^2 – Chi-square; VTOP – Voluntary Termination of Pregnancy; STOP – Spontaneous Termination of Pregnancy

Table 3: Haematological Characteristics of the Women with Threatened Miscarriage

Variable	Outcome Loss due to Threatened Miscarriage		Test Statistics	p-value
	No n=107 n (%)	Yes n=159 n (%)		
Hb Genotype			χ2= 7.169	0.067
HbAA	86 (37.2)	145 (62.8)		
HbAC	7 (70.0)	3 (30.0)		
HbAS	13 (56.5)	10 (43.5)		
HbSC	1 (50.0)	1 (50.0)		
Blood Group			χ2= 3.393	0.335
A	42 (41.2)	60 (58.8)		
AB	4 (66.7)	2 (33.3)		
B	17 (47.2)	19 (52.8)		
O	44 (36.1)	78 (63.9)		
Rhesus Factor			χ2= 0.043	0.837
Positive	101 (40.1)	151 (59.9)		
Negative	6 (42.9)	8 (57.1)		
Bleeding Volume			Fisher's Exert Test = 13.497	<0.001*
Scanty	102 (44.5)	127 (55.5)		
Moderate - Heavy	5 (13.5)	32 (86.5)		

*χ^2 – Chi-square; *- statistically significant*

Table 4: Sonographic Characteristics of the Women with Threatened Miscarriage

Variable	Outcome Loss due to Threatened Miscarriage		Test Statistics	p-value
	No n=107 n (%)	Yes n=159 n (%)		
Number of Fetus			Fishers Exert Test = 3.831	0.050*
Singleton	100 (39.1)	156 (60.9)		
Twin	7 (70.0)	3 (30.0)		
Subchorionic Haematoma			χ2= 1.247	0.264
Present	17 (33.3)	34 (66.7)		
Absent	90 (41.9)	125 (58.1)		
Finding of Uterine Malformation			Fishers Exert Test = 4.180	0.041*
Present	2 (13.3)	13 (86.7)		
Absent	105 (41.8)	146 (58.2)		

*χ^2 – Chi-square; *- statistically significant*

The table 3 showed the haematological findings among the participants. 86.5% of the participants who had moderate to heavy bleeding had loss of the pregnancy while 44.5% of those who had scanty bleeding, had no outcome loss from threatened miscarriage. This bleeding volume was found to be statistically significant (Fishers Exert Test = 13.497, p-value=0.001). However, Haemoglobin genotype, blood group or Rhesus factors of the participants had no significant relationship with outcome of threatened miscarriage in the participants.

The table 4 depicted the sonographic findings in the reviewed cases. 60.9% of the participants with ultrasound findings of singleton fetus had outcome losses while 70% of participants with ultrasound findings of twin gestation had no outcome loss. This showed statistical significance (Fishers Exert Test = 3.831, *p*-value=0.05). The finding of uterine malformation on ultrasound was also found to have a statistically significant relationship with outcome loss due to threatened miscarriage (Fishers Exert Test = 4.180, *p*-value=0.041) as 86.7% of the those who had ultrasound findings of uterine malformation had outcome losses while 41.8% of those without any uterine malformation had no outcome loss. Subchorionic hematoma were present in 66.7% of participants with outcome losses while it was absent in 41.9% of those without outcome loss but subchorionic hematoma findings on ultrasound had no statistical significance with the development of outcome loss from threatened miscarriage ($\chi2 = 1.247$, *p*-value=0.264).

Table 5: Obstetrics Characteristics of the women with Threatened Miscarriage

Variable	Outcome loss due to Threatened Miscarriage		Test Statistics	*p*-value
	No n=107 n (%)	Yes n=159 n (%)		
Booking Status Unbooked Booked	 1 (0.6) 106 (94.6)	 153 (99.4) 6 (5.4)	Fisher's Exert Test = 294.382	< 0.001*
Trimester at Presentation 1st Trimester 2nd Trimester	 88 (39.5) 19 (44.2)	 135 (60.5) 24 (55.8)	χ^2= 0.335	0.563
Gestational Age at Presentation (days) Mean GA ± SD	 75.91 ± 27.14	 70.87 ± 23.60	t=1.609	0.110
Mode of Conception Spontaneous Assisted Conception	 106 (40.3) 1 (33.3)	 157 (59.7) 2 (66.7)	Fisher's Exert Test = 0.060	0.807
Coexisting Condition Cervical Incompetence Malaria Ovarian Cyst UTI Uterine Fibroids None	 2 (50) 16 (37.2) 1 (33.3) 1 (11.1) 12 (37.5) 75 (42.9)	 2 (50) 27 (62.8) 2 (66.7) 8 (88.9) 20 (62.5) 100 (57.1)	Fisher's Exert Test = 0.913	0.837
Duration of Admission (days) Mean days ± SD	 5.72 ± 3.61	 5.30 ± 2.44	t=1.122	0.263

*χ^2 – Chi-square; SD – Standard Deviation; *- statistically significant; UTI – Urinary Tract Infection*

The table 5 reviewed the obstetric findings in all the participants and it was noted that 99.4% of participants without antenatal booking (that is, unbooked) experienced outcome loss from threatened miscarriage while 94.6% of those who were booked had no outcome loss. Having antenatal booking was therefore found to be statistically significant in relationship to having no outcome loss from threatened miscarriage. (Fishers Exert Test = 294.382, *p*-value <001). The participants were either at their first or second trimester of gestation at the time of presentation with threatened miscarriage and there was no found statistical relationship between trimester at presentation and the outcome of the threatened miscarriage ($\chi 2$ = 0.335, *p*-value=0.563). While the mean gestational at presentation with threatened miscarriage for those without outcome loss was 75.91 ± 27.14 days, the mean gestational age at presentation for those who had outcome loss was 70.87 ± 23.60 days and with no statistically significant relationship to pregnancy loss. (t = 1.609, *p*-value=0.110).

It was noted that only 3 (1.1%) of the participants had the pregnancy conceived via artificial reproductive technique and the mode of conception of pregnancy had no statistically significant relationship with any outcome loss from threatened miscarriage (Fishers Exert Test = 0.060, *p*-value=0.807). Some coexisting conditions found in some of the participants reviewed included in increasing frequency, Ovarian Cysts 3 (1.1%), Cervical incompetence 4 (1.5%), Urinary Tract Infection 9 (3.4%), Uterine Fibroids 32 (12.0%), and Malaria 43 (16.2%) but the presence of these coexisting conditions had no statistically significant relationship with development of an outcome loss from threatened miscarriage (Fishers Exert Test = 0.913, *p*-value=0.837). Patients with threatened miscarriage were admitted for bed rest in the hospital and the result from this study showed similar durations in the number of admission days for those without outcome loss (5.72 ± 3.61 days) and those with outcome loss (5.30 ± 2.44 days) and without any statistically significant relationship with the outcome of threatened miscarriage (t = 1.122, *p*-value=0.263).

Table 6 focused on factors associated with the continuation of pregnancy after occurrence of threatened miscarriage. The factors deduced from the binary logistic regression were only two. These include antenatal booking of the pregnancy (OR=7.902, *p*-value < 0.001) as being booked increases the chances of continuation of pregnancy after occurrence of threatened miscarriage. In a similar manner, participants with light bleeding volume at presentation with threatened miscarriage has higher chances of continuation of pregnancy than those with moderate to heavy bleeding at presentation with threatened miscarriage (OR=5.140, *p*-value<0.001). Ultrasound findings of uterine malformation and number of fetuses conceived were also checked in the binary logistic regression but those were found not to have any statistically significant relationship with the continuation of pregnancy after threatened miscarriage (*p*-values=0.059 & 0.066 respectively).

Table 6: Logistic Regression Analysis for Factors Related to Continuation of Pregnancy After Threatened Miscarriage

Parameter	Odd Ratio	*p*-value	95% C I	
Booking Status	7.902	< 0.001	320.754	22778.233
Ultrasound finding of Uterine Malformation	0.232	0.059	0.051	1.057
Number of fetuses	0.275	0.066	0.069	1.087
Bleeding Volume	5.140	< 0.001	1.933	13.667

Discussion

From our study, the incidence rate of threatened miscarriage is 7.97%. This figure is relatively close to

values found in similar studies conducted in Nigeria. Anikwe *et al*, 2019 in a study conducted in South East, Nigeria, reported 7.7%[9], Sowemimo *et al*, 2017 reported 5.7% incidence rate for threatened miscarriage for another tertiary hospital in South-west Nigeria[10] while Umar *et al*, 2014 in the Northern part of Nigeria, reported an incidence rate of 6.8%[11]. A similar study conducted by Konje *et al*, 1992, about 30years ago however did not report any incidence of threatened miscarriage for our centre[16] and this could have been a background basis for comparison within our local environment. These low incidence rates for threatened miscarriage compared to the reports of 20-25% global rates of threatened miscarriage by some studies[1, 8] may however not be the actual incidence of the gynaecology disease burden in Nigeria. This reason being that the studies stated above were conducted at tertiary health centres[9-11] which receives referral from nearby clinics and health-centres and the notable poor health seeking behavior in our environment may have accountable for the low rates as some women with threatened miscarriage may have failed to present[19]. A large population-based study in Nigeria may more appropriately give us the true incidence rate of threatened miscarriage.

From the review of all the cases of threatened miscarriage that occurred within the 5year period in our centre, there was 159 (55.4%) outcome loss which resulted in spontaneous termination of pregnancies on those participants while 107 (37.3%) favourably carried their pregnancies beyond the age of viability (that is, they had no outcome loss). There was a 21 (7.3%) lost to follow up as the eventual outcome of the case could not be ascertained. Our 55.4% outcome loss is noted higher than the 50% of threatened miscarriage ending in complete or incomplete miscarriage found in a similar study[14]. The similar study in south west Nigeria reported 50% of participants carrying the pregnancies beyond age of viability[10] compared to our figure of 37.3%. However, our absolute figure was 107 compared to the 54 women absolute figure, that carried gestation beyond age of viability, from the study by Sowemimo *et al,* 2017[10].

We were able to deduce from our study that two factors that may increase the chances of continuation of pregnancy after the occurrence of threatened miscarriage and these factors include early antenatal booking (OR=7.902, *p*-value<0.001) and bleeding volume at presentation being light (OR=5.140, *p*-value<0.001). From the results of study, 99.4% of patients without antenatal booking had pregnancy outcome loss while 94.6% of the booked patients had continuation of their pregnancies beyond the age of viability. This is buttressed also by Agrawal *et al,* 2014 in her Prospective study[1]. This can be explained by the better health seeking behavior that occurs from pregnant women that register/book in a hospital her pregnancy early and their possible receipt of early pregnancy care that invariable enables overcoming challenges of threatened miscarriage and improve the chance of continuation of such pregnancy.
In our study, we also found that blood volume if scanty, increases the odds of continuation of pregnancy after threatened miscarriage (OR=5.140, *p*-value<0.001). 86.5% of the participants who had moderate to heavy bleeding had outcome loss. Seema *et al,* 2017[20] in her study also support this position and it can be inferred that with decreased bleeding volume, the chance becomes higher for the continuation of pregnancy in cases of threatened miscarriage.

CONCLUSION

This study has shown that there are about 80 admitted cases of threatened miscarriage out of every 1,000 gynaecology admissions at our centre during the study period from the incidence rate of 7.97%. There is 55.4% outcome loss with only 37.3% of cases carrying pregnancy beyond the age of viability. Women with history of scanty bleeding at presentation and those that had early antenatal booking have increased chances of continuation of pregnancy after occurrence of threatened miscarriage. Health education for women in both gynaecological and antenatal clinics should therefore encourage women to book pregnancies on time as this may aid prompt care in cases of unexpected, threatened miscarriage and improve the chances of continuation of such threatened gestation.

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