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Original Research Article

Clinical and complication outcomes of abortions in pregnant women: insights from a tertiary care center

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ABSTRACT

Background: Abortion is a highly debated and controversial topic that has sparked intense discussions and emotions across the globe. Clinical outcomes of abortions are crucial in understanding the safety and effectiveness of different abortion methods. The present study was carried to evaluate the clinical outcomes and complications associated with the abortions in a tertiary healthcare centre.
Methods: This was a prospective observational study conducted on 115 women with a gestational age <24 weeks who were admitted to the labour room for all types of abortions. The demographics and clinical manifestation of the women were recorded. Various types and methods of abortion were recorded. The post abortion complications were also recorded.
Results: The most common method of abortion was missed abortion in 32.1% of the cases. The most prevalent method of abortion was the most common was by tablet mifepristone 200 mg tablet misoprostol 600 µg in 69% of the patients. Regarding post abortion complication, majority of the patients had anemia in 15 (30%) of the cases. There was a significant association between complication and abortion type ($p<0.001$).
Conclusions: Missed abortion was the most common type and the medical method of abortion is the prevalent mode of abortion. Thus, it is important to consider the long-term effects on reproductive health that may result from complications during abortion procedures.

Keywords: Abortion, Anemia, Mifepristone, Misoprostol, Missed abortion

INTRODUCTION

Abortion, defined as the intentional cessation of pregnancy prior to the fetus attaining viability, continues to be a subject of significant debate worldwide. Globally, 73 million induced abortions has been reported annually and among these 61% are unintended pregnancies and 29% comprises of induced abortion.[1] In addition abortion has significant impact on women's mental health and affects the quality of life.[2] In India, a total of 15.6 million abortions were reported in 2015, resulting in an incidence rate of 47.0 abortions per 1,000 women.[3] Of the total abortions reported, 22% occur in hospital settings, while 73% are medication abortions conducted outside of hospitals. Additionally, 5% are performed using methods other than medication outside of hospital facilities.[3]

In India abortion is legal and it is relatively safe procedure when it is performed under the medical supervision. However, most of the Indian women prefer unsafe abortions with an incidence rate of 67% in India, and it is associated with significant morbidity and mortality.[4] Previous research indicates a significant prevalence of unsafe abortion and its associated complications among women of reproductive age in India.[5] Complications following abortion can vary in severity, encompassing both minor issues that are readily manageable and rare, yet severe conditions that may lead to significant morbidity or mortality. Previous study conducted in India reported that around 5.2 million women underwent treatment for complications arising from induced abortions.[6] Approximately 50% of patients presenting post-abortion were diagnosed with incomplete abortion attributed to

medication abortion. Complications associated with abortion procedures can manifest as pain, extended or atypical bleeding, injury, perforation, laceration, sepsis, shock, irregular menstrual cycles, and incomplete abortion, which may arise from medication-induced or procedural methods. Additionally, infections of the upper genital tract may occur, leading to conditions such as endometritis, oophoritis, parametritis, and salpingitis.[7] Infections of cervix as a result of mycoplasma bacterial vaginosis is reported during abortion and it its untreated it might lead to infertility.[8] In this backdrop, the present study was carried out to evaluate the clinical outcomes and complications associated with abortion in a tertiary healthcare centre.

METHODS

This was a prospective observational study carried out in the department of obstetrics and gynaecology at Al-Ameen Medical College, Vijayapura, and Karnataka from November 2022- May 2024. The study was conducted on 115 women with a gestational age <24 weeks who were admitted to the labour room for all types of abortions after receiving ethical committee approval.

With anticipated proportion of incomplete abortion 4.6%, the study would require a sample size of 115 patients with 95% level of confidence and 4% absolute precision, using Statulator software.

Formula used = $z^2p\times q/d^2$

Where Z= Z statistic at α level of significance; d^2= absolute error; P= Proportion rate; q=100-p.

Inclusion criteria

Women in age group of 18-35 years, singleton pregnancies, GA<24 weeks, fulfil the criteria for MTP act of India and who gave informed consent were included in the study.

Women with medical conditions like severe asthma, cardiac conditions, complicated diabetes, adrenal failure, severe anemia, hemorrhagic disorders were included in the study. Women receiving long term glucocorticoid therapy and anti-coagulants were also included in the study.

Exclusion criteria

Women with period of gestation more than 24 weeks and who had lost to follow up were excluded from the study.

Data collection

The selected patients were advised to admit in labour ward and to stay in hospital till pregnancy is terminated. Complete evaluation of each patient was done at the time of admission. Detailed history as well as findings on medical and obstetric examination was recorded.

Data analysis

The data was represented as mean±SD, frequency and percentage. Chi square test was done to study the association between complication and abortion. A p value <0.05 was considered as statistically significant.

RESULTS

The study was conducted on 115 pregnant women attending the antenatal clinic for abortion. The demographics and clinical characteristics of the patients are shown in Table 1. The mean age of the patients was 28.54±5.21 years and majority maximum 43 (37.4%) were from age of 25-29 years. Regarding consanguinity majority of the patients had non-consanguinity marriage encompassing 82 (71.3%) and 28 (24.3%) had consanguinity marriage. Majority of the patients were multigravida representing 90 (69.6%) and 35 (30.4%) were in primigravida. Regarding comorbid conditions, 5 (4.3%) had hypertension, 5 (4.3%) had diabetes mellitus, 15 (13.1%) had anemia and 5 (4.3%) had pedal edema. Urine albumin and sugar was present in 5 (4.3%) of the patients. Regarding blood group, majority of the women 57(49.6%) were O positive and 33 (28.7%) were B positive blood group.

Table 1: Demographics and clinical characteristic of the study participants.

Variables	Frequency (%)
Age wise distribution (years)	
<20	12 (10.4)
20-24	36 (31.3)
25-29	43 (37.4)
30-34	24 (20.8)
Blood group	
O positive	57 (49.6)
A positive	8 (7)
B positive	33 (28.7)
AB positive	6 (5.2)
A negative	9 (7.8)
B negative	2 (1.7)
Consanguinity	
Non-consanguinity marriage	82(71.3)
Consanguinity marriage	28(24.3)
Unmarried	5 (4.3)
Gravida	
Primi	35 (30.4)
Multi	90 (69.6)
Comorbidities	
Hypertension	5 (4.3)
Diabetes mellitus	5 (4.3)
Anemia	15 (13.1)
Pedal edema	5 (4.3)
Urine analysis	
Albumin	5 (4.3%)
Sugar	5 (4.3%)

Regarding abortion types, majority of the pregnant women had 37 (32.1%) had missed abortion followed by 31 (26.9%) with incomplete abortion, 13 (11.3%) with inevitable abortion, 15 (13%) having MTP and 2 (1.7%) had threatened abortion. The results are shown in Table 2.

Table 2: Types of abortion among the study participants.

Abortion	Frequency (%)
Missed abortion	37 (32.1)
Complete abortion	3 (2.6)
Incomplete abortion	31 (26.9)
Blighted ovum	6 (5.2)
Threatened abortion	2 (1.7)
Inevitable abortion	13 (11.3)
Recurrent abortion	2 (1.7)
Septic abortion	6 (5.2)
MTP	15 (13)

Table 3: Method of induction among the study participants.

Method of abortion	Frequency (%)
Mifepristone 200 mg tablet and misoprostol 600 µg tablet	78 (69)
Misoprostol 600 µg tablet	31 (27.4)
Foleys induction	4 (3.5)
None	2 (1.7)

Regarding abortion methods, the most common was by tablet mifepristone 200 mg tablet misoprostol 600 µg in 78 (69%) of the patients, followed by tab misoprostol 600 µg in 31 (27.4%), 4 (3.5%) by Foleys induction and 2 (1.7%) were from no specific methods. The results are shown in Table 3.

Table 4: Post abortion complications among the study participants.

Complications	Frequency (%)
Anemia	15 (13)
Fever	6 (5.2)
No complications	94 (81.7)

Regarding post abortion complication, majority of the patients had anemia in 15 (30%), followed by fever in 6 (5.2%) of the patients. In addition, all the 115 women who had abortion had good outcome and no mortality was observed. The results are shown in Table 4.

The association between complications and type of abortion is shown in Table 5. Among 15 patients with anemia, 3 (20%) of the patients had complete and incomplete abortion and 2 (13.3%) had missed abortion and inevitable abortion and 1 (6.6%) had blighted ovum and threatened abortion and 3 (20%) had MTP. Among the 6 patients who had fever, all of them 6 (100%) had septic abortion. In 94 patients without complication, 35 (37.2%) had missed abortion, 28 (29.2%) had incomplete abortion, 1 (1.1%) had threatened and 2 (2.2%) had recurrent abortion. Overall, the association was found to be statistically significant (p<0.001).

Table 5: Association between complications and type of abortion.

Type of abortion	Complication (%)			Total (%)	Chi value	P value
	Anemia	Fever	Nil			
Missed abortion	2 (13.3)	0 0.0)	35 (37.2)	37 (32.10)	133.321	<0.001*
Complete abortion	3 (20.0)	0 (0.0)	0 (0.0)	3 (2.6)		
Incomplete abortion	3 (20.0)	0 (0.0)	28 (29.8)	31 (26.9)		
Blighted ovum	1 (6.6)	0 (0.0)	5 (5.3)	6 (5.2)		
Threatened abortion	1 (6.6)	0 (0.0)	1 (1.1)	2 (1.7)		
Inevitable abortion	2 (13.3)	0 (0.0)	11 (11.7)	13 (11.3)		
Recurrent abortion	0 (0.0)	0 (0.0)	2 (2.2)	2 (1.7)		
Septic abortion	0 (0.0)	6 (100)	0 (0.0)	6 (5.2)		
MTP	3 (20)	0 (0.0)	12 (12.7)	15 (13)		
Total	15 (100)	6 (100)	94 (100)	115 (100)		

*denotes significant (p<0.05), Chi square test.

DISCUSSION

Abortion is a medical procedure that terminates a pregnancy, and there are different types of abortions depending on the gestational age and health of the woman. It is crucial to understand the clinical outcomes and potential complications associated with abortions in order to provide safe and effective care for patients. By examining the risks and benefits of different abortion methods, healthcare providers can make informed decisions and ensure the well-being of their patients. Thus, the present hospital based prospective observational study has been done at the department of obstetrics and gynecology, Al-Ameen Medical College, Athani road,

Vijayapur a total of 115 cases of abortions were selected for the study with some inclusion and exclusion criteria.

In the present study, the mean age of the patients was 28.54±5.21 years and majority maximum 43 (37.4%) were from age of 25-29 years. In a study done by Carlsson et al the mean age of the patients who underwent abortion was 26 years.[9] In a study done by Pradhan et al majority of the abortion cases were in the age range 25-34 years in 59.28%.[10]

In this study, majority of the patients who had abortion were multigravida representing 90 (69.6%) and 24.3% had consanguinity marriage. Numerous studies have indicated a heightened mortality risk among the progeny of consanguineous unions. The most frequently researched and recognized correlation with consanguinity marriage is congenital abnormalities. Progeny of consanguineous persons are more predisposed to rare autosomal recessive disorders than progeny of non-consanguineous spouses. Absolute risk differs among populations and outcomes, with a noted increase of 1.7-2.8% for offspring of first cousins compared to those from unrelated couples.[11] In a study done by Robertson et al those in consanguinity marriage exhibited a modestly elevated risk of any (OR: 1.15) and early (OR, 2.03) spontaneous abortion in comparison to those in non- consanguinity marriage.[12]

In the present study, the incidence of comorbidities hypertension and diabetes mellitus is 4.3% and 13.1% had anemia. Zhao et al examined the correlation between a history of spontaneous or induced abortion and the following risk of gestational diabetes mellitus (GDM).[13] The study, comprising a sample of 102,259 women, revealed that pregnant women who solely underwent spontaneous abortions had a 25% elevated risk of gestational diabetes mellitus (GDM), whereas those who experienced both spontaneous and induced abortions exhibited a 15% increased risk of acquiring GDM. The study's authors hypothesized that additional diseases, such as metabolic disorders linked to abortions, may partially elucidate this association. In a study conducted in India, pregnant women with anemia had previous history of anemia in 40% of the patients.[14]

In the present study regarding the abortion types, majority of the pregnant women had 37 (32.1%) had missed abortion followed by 31 (26.9%) with incomplete abortion, 13 (11.3%) with inevitable abortion, 15 (13%) having MTP and 2 (1.7%) had threatened abortion. In a study conducted by Ahmed et al.[15] 73% of cases were classified as incomplete abortion, 12% as septic abortion, 8% as missed abortion, 5% as inevitable abortion, and 2% as threatening abortion. In another study done by Khatun et al 77% of the patients had spontaneous abortion and 23% had induced abortion.[16]

Regarding abortion methods, the most common was by tablet mifepristone 200 mg tab misoprostol 600 µg in 78 (69%) of the patients, followed by tablet misoprostol 600 µg in 31 (27.4%), 4 (3.5%) by Foleys induction and 2 (1.7%) were from no specific methods. Medical abortion is essential for ensuring access to safe, effective, and acceptable abortion services. Mifepristone and misoprostol, either in combination or administered individually, are the standard pharmaceuticals for inducing abortion and are included in the WHO list of essential medicines. Combination regimens are preferred for induced abortion over misoprostol alone, as they are more effective in inducing complete abortion.[17]

Regarding post abortion complication, majority of the patients had anemia in 15 (30%), followed by fever in 6 (5.2%) of the patients. In a study done by Ahmed et al complications, varying from mild to severe, may occur as a consequence of abortion.[15] A patient may experience multiple complications. Around, 70% of the patients had anemia, 25% presented with shock, 35% experienced hemorrhage, and 3% sustained uterine damage.

In the present study, there was a significant association between complication and abortion type ($p<0.001$). Among total 15 (100%) anemic patient, 3 (20%) having complete and incomplete abortion and 2 (13.3%) having missed abortion and inevitable abortion and 1 (6.6%) having blighted ovum and threatened abortion and 3 (20%) having MTP. Out of total, 6 (100%) having fever, 6 (100) having septic abortion, and out of total 94 (100%) patient with no complication, maximum 35 (37.2%) having missed abortion, 28 (29.2%) having incomplete abortion and only 1 (1.1%) having threatened and 2 (2.2%) having recurrent abortion.

Existing literature indicates a correlation between partial abortions and placenta praevia, but no correlation with placental abruption. Further, women experiencing a second pregnancy following an initial incomplete abortion had increased odds of both placenta previa and placental abruption; women in their third pregnancy after an incomplete abortion in their second pregnancy exhibited a greater likelihood of placenta previa, yet had no placental abruption.[18] Available evidence indicates a reduced risk of pre-eclampsia following incomplete abortions.[19,20]

The major limitations are single center study and small sample size.

CONCLUSION

Abortion is a prevalent gynecological issue in India, with missed abortion being the most common type. Medical termination of pregnancy is the most common method of abortion. By implementing strategies such as pre-abortion counselling, thorough follow-up care, and ensuring access to safe abortion services, we can help reduce the incidence of complications and improve the overall well-being of women seeking abortion care.

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