



Comparison between Medical and Surgical Treatment of Incomplete First Trimester Abortion

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Abstract: Introduction: Women with an incomplete, inevitable, or missed abortion predictable by ultrasound imaging, can be controlled, medically, surgically or expectantly. Using of medical and surgical treatments were satisfactorily effective and safe, and tolerable to women. Patients treated with medication and still complaining from extreme bleeding are advised to admitted to the emergency department. **Aim of the work:** To evaluate medical and surgical methods for controlling of incomplete abortion at first trimester. **Patients and Methods:** The investigation is a prospective comparative study was conducted in Al-Azhar University Hospitals clinic between June 2018 and June 2019. Three hundred patient were diagnosed as the first-trimester incomplete miscarriage and randomly divided into three groups each group included one hundred patients. Group I (surgical management): they underwent Evacuation & Curettage (E & C). Group II (medical management) (Misoprostol group): they received oral Misoprostol of 200 mcg on six hourly intervals for a maximum of forty eight hours duration. Group III (expectant management): just for observation and no treatment. All patients were followed up after 1 week with a transvaginal ultrasonography. **Results:** In this study, Success rate was 96%, 90%, 80% in groups I, II and III, respectively, failed treatment was in 4 patients in surgical group and need re-evacuation, in 10 patients in Misoprostol group and in 20 patients in expectant group and need surgical management. The difference in failure rate between the studied groups was statistically significant. As regards complications There were statistically a high significant difference between the three studied groups regarding excessive bleeding (1%, 6% and 15% in groups I, II and III, respectively). Regarding re-evacuation a significant difference (4%, 10% and 20% in groups I, II and III, respectively) was recorded, also, a non-significant differences regarding perforation (only 1 patient in group I) and foul smelling and vaginal discharge (only 1 patient in group III). As regards patient satisfaction, Satisfaction was 85%, 95% and 80% in groups I, II and III, respectively, a statistically there were a significant variation between the three studied groups regarding patient satisfaction. **Conclusion:** Misoprostol is found to be as effective as surgical treatment in the treatment of incomplete miscarriage, at a single dose of 200 mcg, with complete evacuation of uterus in most women, and the side effects can be tolerated by all patients. Patients who didn't want to stay in the hospitals are highly pleased with the misoprostol therapy. The volume of bleeding was more or less comparable to the menstrual bleeding which didn't impact the daily tasks of the women. The medical therapy is an efficient tool like a surgical interference and the patient satisfaction is more higher than the surgical evacuation.

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1. Introduction

Spontaneous abortion (miscarriage) is defined as sudden termination of a pregnancy prior the fetus has completing the full gestational time (1).

Women with an incomplete, inevitable, or missed abortion recognized by ultrasound images can be treated medically, surgically, or expectantly (2).

Treatment opportunities were classified into five groups: placebo (e.g. a planned placebo involvement within a trial sets), expectant (e.g. conservative controlling without active intervention comprising placebo), medical (drugs used by different routs and doses for inducing of abortion), surgical (e.g. any surgical devices applied under local or general anesthetic agents to perform evacuation of uterus) and

a combination of any medical regimens with surgical interference applied successively.

To diminish the variation in the network, the current work, combined placebo and conservative managements (expectant management). The study is excluded the un traditionally used medical drugs such as Methotrexate, which reported in few studies (3).

Surgical management for first or early second trimester failed pregnancy include vacuum or suction aspiration which is the mainly applied surgical tool. The second more applied method of surgical evacuation of the uterus is dilatation and curettage (D & C), which includes opening the cervical os of the uterus and evacuating the uterine content through using of surgical devices and suction.



All these procedures were done to stop possible bleeding and secondary with microbial infections due to retention of fetus and placental membranes. The other complications resulting from anesthesia and procedures of evacuation represented in cervical trauma, intrauterine adhesions, uterine perforation, and infection due to pollution from instruments or from personals, which might after that causing ectopic pregnancy or infertility (4).

However, the risks arising from evacuation of the uterus are small and can be carried efficiently and safely as an office procedure. Women who prefer no waiting for spontaneous or induced uterine evacuation by medical therapy and women not suffering from heavy bleeding or intrauterine infection, where the delaying in treatment is risky, so they preferring surgical approach. Suction curettage is superior than sharp curettage, where the later is accompanied by high incidence of morbidity (5).

Effective medical therapies for inducing abortion is now another option for women where surgery is refused by the woman, not available, or contraindicated (6).

The most common used regimens for treating the early first-trimester abortion is the use of mifepristone plus a prostaglandin analog (misoprostol or gemeprost) for the case up to 9 weeks of pregnancy age, whereas, in up to 7 weeks of pregnancy, a prostaglandin analog alone or a combination of methotrexate and a prostaglandin analog are used (7).

Some authors found that at later gestational stages, a combination regimens of mifepristone and misoprostol is superior than a regimen methotrexate–misoprostol, where the onset of action is faster and the efficiency is high in the former than the later regimen. In addition, the combined regimens are more efficient than using of misoprostol lonely (8).

Medical therapy for induction of abortion at early stages (up to 7 weeks of gestation), using a combination regimen of mifepristone– misoprostol is suggested to be more efficient than surgical abortion (vacuum aspiration), particularly because detailed inspection of aspirated tissue not included during clinical inspection. Using mifepristone, followed 24–48 hours later by buccal or vaginal misoprostol for induction of abortion at early stage of gestation up to 9 week is efficient in about 98%. In cases not respond to the medical therapy, the surgical interference is the option to complete the rest of procedures (9).

The low price, stability at room temperature, ready availability, low incidence of side effects (when given intravaginally) and rarely occurrence of foremost complications are the advantages of misoprostol over other drugs (e.g. prostaglandin E2)(10).

In conclusion, the surgical and medical treatments were found to be effective, safe, and satisfactory to women. Patients who are given medical therapy are advised to admitted to the emergency department, particularly in cases of sever hemorrhage. It was found that the pregnancy outcome and the long-term conception rate for early pregnancy failure are equal for patients who subjected for either medical or surgical evacuation (10).

Aim of the Work

To evaluate medical and surgical methods for management of first trimester incomplete abortion.

Patients and Methods

2. Design:

Prospective randomized controlled trial.

Patients:

This study was conducted in Al-Azhar University Hospitals clinic between June 2018 and June 2019. A total of 300 women were recruited following diagnosis of the first-trimester incomplete miscarriage and randomised into three groups each group included one hundred patients.

The patients were divided into three groups:

- **Group 1 (surgical management):** This group underwent D & E.

- **Group 2 (medical management) (misoprostol group):** This group received oral misoprostol of 200 mcg on six hourly intervals for a maximum of forty eight hours duration.

- **Group 3 (expectant management):** This group for just observation and no treatment.

Inclusion criteria:

- Age from 18 to 35years.
- Patients confirmed to be pregnant by serum B-hCG and presenting with spontaneous first trimestric abortion, complaining of:
 - Mild or moderate vaginal bleeding.
 - Mild to moderate abdominal pain.

Incomplete abortion:

In the present study, the presence of heterogeneous intrauterine contents more than 12mm in thickness of the endometrium by transvaginal ultrasound was considered indicative of retained products of conception due to incomplete abortion (11).

Exclusion criteria:

- Patients with severe vaginal bleeding.
- Patients who were haemodynamically unstable.
- Patients with signs of sepsis.
- Patients with any contraindication to

misoprostol: as Bronchialasthma (12)

- Confirmed or suspected ectopic pregnancy.
- Allergy to prostaglandin in general, or specific misoprostol.

- Presence of intrauterine device (IUD).

- Induced abortion.

Methods: All patients were subjected to:

I- History taking:

Complete history taking with special emphasis on personal history including age, patient menstrual history, date of last menstrual period for confirmation of gestational age, parity number and mode of deliveries, history of drug intake, patient complaint and presence of vaginal bleeding and past and family history.

II- Examination:

The patients were be subjected to careful general, abdominal and local examinations including inspection of external genitalia. Pervaginal examination and bimanual examination to detect size of uterus, its position, mobility and any cervical mass or adnexal masses.

III- Transvaginal U/S:

For detection of uterine size, endometrial thickness, uterine cavity and presence of remnants.

Steps:

- All patients received general anesthesia.
- Patient was put in lithotomy position.
- After disinfection, urinary bladder was emptied using a Nelaton catheter size 16.
- A posterior vaginal wall retractor was be inserted in the vagina.
- Cervix was be grasped with tenaculum.
- Cervical dilatation was be done if needed up to 7 mm using successively larger Hegar's dilators.
- A blunt curette was be inserted through the cervix to the uterine cavity then removing uterine contents and scraping of the lining was done until gritty sensation felt.
- Ecbolics in the form of IV methergine were be given in the event of severe vaginal bleeding.

All patients were be asked to return immediately if severe vaginal bleeding occurs, otherwise to check after one week for follow up with transvaginal U/S.

Treatment was considered successful if:

- No excessive vaginal bleeding.
- Transvaginal ultrasound showed clear endometrial line with thickness less than 12mm.

Mild vaginal bleeding is defined as less than 4 inch in diameter of blood stain on a sanitary pad in the



last 24 hours, or only when wiped. Moderate vaginal bleeding is defined as less than 6 inch in diameter of blood stain on a sanitary pad in the last 24 hours. Severe abdominal pain is defined as pain severe enough to require analgesics.

Ethical considerations:

The study was be approved by the Scientific Ethical Committee of Faculty of Medicine, Al-Azhar University. An informed written consent was be taken from all of the participants in the study.

Sample size justification:

MedCalc® version 12.3.0.0 program was used for calculations of sample size, statistical calculator based on 95% confidence interval and power of the study 80% with α error 5%, According to a previous study (Xia et al., 2011), showed that the 219 subjects (51%) chose a medical method (mifepristone and misoprostol), whereas 211 subjects (49%) chose a surgical method. The efficacy in the surgical group was significantly higher than in the medical group (100 vs. 90%, $p < 0.001$), So it can be relied upon in this study, based on this assumption, sample size was calculated according to these values produced a minimal samples size of 286 cases were enough to find such a difference. Assuming a drop- out ratio of 5%, the sample size will be 100 cases in each group.

-Group I: Surgical method (N=100).

-Group II: Medical "misoprostol" (N=100).

-Group III: Control group (N=100).

Statistical analysis:

- Statistical package for social sciences (IBM-SPSS), version 24 IBM- Chicago, USA (May 2016) was used for statistical data analysis.

- Data expressed as mean, standard deviation (SD), number and percentage. Mean and standard deviation were used as descriptive value for quantitative data, while number and percentage were used to describe qualitative data.

- Student t test was used to compare the means between two groups, and one-way analysis of variance (ANOVA) test was used to compare means of more than two groups. Mann Whitney test was used in stead of Student t test in case of non parametric data.

- Pearson Chi square was used to compare percentages of qualitative data, and Fisher's Exact test was used for non parametric data.

- Pearson correlation test was used to compare two quantitative variables. The value of (r) is explained in the following figures:

$r < 0.2$ = negligible correlation $r 0.2-0.4$ = weak correlation

r 0.4-0.7 = moderate correlation r 0.7-1 = strong correlation

r positive = positive correlation r negative = negative correlation.

- For all these tests, the level of significance (P-value) can be explained as:

- No significance $P > 0.05$
- Significance $P < 0.05$
- High significance $P < 0.001$.

3. Results

There were statistically significant differences between the three studied groups regarding vomiting and nausea ($p < 0.05$). As regards severity of vaginal bleeding, vaginal bleeding was mild in 92 patients in surgical group, in 73 patients in misoprostol group and in 50 patients in expectant group and moderate in 8 patients in surgical group, 27 women in misoprostol group and in 50 patients in expectant group. The difference in severity of vaginal bleeding between the studied groups was statistically high significant. Abdominal pain was shown in 75,85 and 60 patients in surgical, misoprostol and expectant groups, respectively. The difference in presence of abdominal pain between the studied groups was statistically high significant.

Before treatment, the mean of endometrial thickness was 22.1 ± 3.4 mm, 21.9 ± 3.5 mm and 21.8 ± 3.8 mm in surgical, Misoprostol and expectant groups, respectively. The difference between the studied groups was statistically non significant ($p > 0.05$). After treatment, the mean of endometrial thickness was 9 ± 2.5 mm, 9.4 ± 2.6 mm and 9.8 ± 2.8 mm in surgical, Misoprostol and expectant groups, respectively. The difference between the studied groups was statistically non significant ($p > 0.05$).

As regards results of treatment, Success rate was 96%, 90%, 80% in group I, group II and group III respectively, failed treatment was in 4 patients in surgical group and need re-evacuation, in 10 patients in Misoprostol group and in 20 patients in expectant group and need surgical management. The difference in failure rate between the studied groups was statistically significant.

As regards duration of hospitalization In group I the majority of patients stayed in hospital for less than 12 hours for 96 patients, the hospitalization period was 13 – 24 hours for 3 patients and more than 24 hours for only 1 patient for conservation after perforation, group II and group III were treated as outpatient as long as there is no severe bleeding or severe pain.

As regards complications There were statistically a high significant difference between the three studied groups regarding excessive bleeding (1%, 6% and 15% in group I, group II and group III respectively), a significant difference regarding reevacuation (4%, 10% and 20% in group I, group II and group III respectively) and non-significant differences regarding perforation (only 1 patient in group I) and foul smelling and vaginal discharge (only 1 patient in group III).

As regards patient satisfaction, Satisfaction was 85%, 95% and 80% in group I, group II and group III respectively, there were statistically a significant difference between the three studied groups regarding patient satisfaction. 80 %, 93% and 72% in group I, group II and group III respectively, said that they were willing to undergo same treatment in the next time if required. 75%, 93% and 60% in group I, group II and group III respectively, said they would recommend the method to her friends.

Table (1): Side effects among the studied groups

	Group I (n = 100)	Group II (n = 100)	Group III (n = 100)	P
Vomiting	5	10	1	0.017(S)
Nausea	12	20	8	0.039(S)
Fever	10	12	8	0.64(NS)
Diarrhea	2	18	5	< 0.001(HS)
Severity of vaginal bleeding				
Mild	92	73	50	< 0.001 (HS)
Moderate	8	27	50	
Abdominal pain				
No	25	15	40	< 0.001 (HS)
Yes	75	85	60	



Table (2): Comparison between the studied groups as regards endometrial thickness

Endometrial thickness	Group I (n = 100)	Group II (n = 100)	Group III (n = 100)	P
Before	22.1 ± 3.4	21.9 ± 3.5	21.8 ± 3.8	0.83(NS)
After	9±2.5	9.4±2.6	9.8±2.8	0.107(NS)
P	< 0.001 (HS)	< 0.001 (HS)	< 0.001 (S)	

Table (3): Comparison between the studied groups as regards results of treatment

	Group I (n = 100)	Group II (n = 100)	Group III (n = 100)	X ²	p
Success	96	90	80	13	0.0015 (S)
Failed	4	10	20		

Table (4): Comparison between the studied groups as regards duration of hospitalization

Period by hours	Group I (n =100)	Group II (n =100)
≤ 12	96	outpatient
13-24	3	outpatient
> 24	1	outpatient

Table (5): Comparison between the studied groups as regards complications

	Group I (n = 100)	Group II (n = 100)	Group III (n = 100)	p
Perforation	1	0	0	0.36 (NS)
Foul smelling and vaginal discharge	0	0	1	0.36 (NS)
Reevacuation	4	10	20	0.0032 (S)
Excess bleeding	1	6	15	< 0.001 (HS)

Table (6): Patient satisfaction

	Group I (n =100)	Group II (n =100)	Group III (n = 100)	p
Satisfied	85	95	80	0.006 (S)
Not	15	5	20	
Same treatment if required	80	93	72	< 0.001 (HS)
Recommend to friend	75	93	60	< 0.001 (HS)

4. Discussion

Incomplete miscarriage is defined as vaginal hemorrhage that is continuing anywhere pregnancy tissue has already been approved, whereas, by using ultrasound examination revealed to the presence of further tissues products inside the cavity of the uterus (13). Spontaneous miscarriage develops in 20- 25% of women during early gestation, with an overall

frequency of spontaneous miscarriage between clinically predictable pregnancies ranged from 12 to 19% (14). The control of miscarriage has improved and evacuation of the uterus by surgical methods has been proposed, particularly in case of retained tissues of conception. However, surgical management is associated with significant morbidity for example, infection, uterine perforation or bowel damage. The



medical approach for miscarriage control was reached up to 95% of early miscarriages in order to accomplish complete uterine evacuation, has been established as a convincing substitute to surgical evacuation. The methods involve the combination of the mifepristone, anti-progesterone, and the prostaglandin E1 analogue and misoprostol, are low in costly for each patient in comparison with surgical interference (15).

The aim of this study is to evaluate medical and surgical methods for management of first trimester incomplete abortion.

This prospective randomized controlled trial study was conducted at Al-Azhar University Hospitals. It included three hundred female patients suffering from mild or moderate vaginal bleeding after spontaneous abortion in first trimester with retained products of conception.

The patients were divided into three groups: **Group 1 (surgical management):** This group included one hundred patients and they underwent D & E, **Group 2 (medical management) (Misoprostol group):** This group included one hundred patients and they received oral Misoprostol of 200 mcg on six hourly intervals for a maximum of forty eight hours duration and **Group 3 (expectant management):** This group included one hundred patients and just for observation and no treatment.

There were statistically significant differences between the three studied groups regarding **side effects** (vomiting and nausea) with ($p < 0.05$). For severity of vaginal bleeding, it was (mild) in 92,73 and 50 patients in groups I, II and III, respectively. and (moderate) in 8, 27 and 50 patients in groups I, II and III, respectively. The difference in severity of vaginal bleeding between the studied groups was statistically high significant.

Also, abdominal pain was among side effects that was found in 75 patients in group I, in 85 patients in group II and in 60 patients in group III. The difference in presence of abdominal pain between the studied groups was statistically high significant.

In the study by **Tripathi et al (2018)** Incidence of excessive bleeding in MVA group was 3.13% while in misoprostol group was 14.7% (p -value=0.021). In pain and bleeding, there were statistically significant differences in both groups ($p < 0.05$) which is compatible with the current study. Most common side effect observed was retained products of conception (POC) ($n=22$, 43.13%) followed by bleeding ($n=10$, 19.61%), diarrhoea ($n=9$, 17.64%), fever ($n=4$, 7.84%), vomiting ($n=3$, 5.88%) and shivering ($n=2$, 3.92%) and infection ($n=1$, 1.96%). **Sajan et al (2015):** The prospective study involved 212 patients confirmed pregnancy miscarriages of less than 13 weeks by ultrasound examination, who were assigned

to surgical evacuation (Control, $n=100$) and expectant management (Cases, $n=112$). The current investigation compared expectant management of early pregnancy miscarriages with surgical uterine evacuation regarding both the efficacy and safety.

The most of patients in the study group had only mild bleeding at 80% and 83% in expectant and surgical groups, respectively, there were statistically non significant differences in both groups which against this study. Fifteen and twelve percent of expectant and surgical groups had been showing moderate hemorrhage, whereas, maximum of patients in expectant and surgical groups complaining only from mild tolerable pain. Severe pain was recorded in 8% and 4% ($p < 0.05$) of patients in expectant and surgical groups, respectively, there were statistically significant differences in both groups which is similar to the current study. **Shokry et al (2014)** carried out a prospective comparative study on 147 patients complaining from first trimester incomplete abortion of gestational age from 8 up to 12 weeks demanding medical management. Depending on the request of patients divided into 2 groups, one (misoprostol group) received medical therapy (misoprostol tablet 400 mcg/4hr/3doses), and the other group (surgical evacuation) preferred surgical evacuation under general anesthesia. The results revealed that the frequency of severe bleeding post-abortion was less ($p=0.0336$) the surgical evacuation group than in Misoprostol group, there were statistically significant differences in both groups which is compatible with the current study. **Fernlund et al (2018)** Ninety-four patients used misoprostol intra-vaginally and 95 patients treated with expectant management in women complaining from vaginal bleeding and non-viable pregnancies for full evacuation of the uterus. The results demonstrated that in the Misoprostol, high percentage of women experienced pain, 91/91 (100%) versus 71/77 (92.2%), and used painkillers, 85/91 (93%) versus 59/77 (77%), than in the expectantly managed group, there were statistically significant differences in both groups which is compatible with the current study. No major side effects were reported in any group. **Tahir et al (2018)** The study found that the association of side effect in women among both groups were less in MVA group common side effects which reported were mainly heavy bleeding (96.1% vs. 3.90%), normal bleeding (75.5% vs.24.5%) fever (100% vs. 0%), and fever with chills (100% vs. 0%). there were statistically significant differences in both groups which is compatible with this study. **Dars et al (2017)** This case-control study was conducted on 124 women, from them 62 were managed by up to two doses of 800- μ g misoprostol intra-vaginally and 62 expectantly. compare the safety and effectiveness of



expectant management with medical management by misoprostol in cases of first trimester miscarriage. There was no statistically significant difference in side effects between the two groups, misoprostol and expectant group respectively, Continuous bleeding 3 (4.84%) Vs 5 (8.07%), Nausea 23 (37.10%) Vs 17(27.42%), Vomiting11(17.74%) Vs9(14.52%), Diarrhea14(22.58%) Vs16(25.81%), Pyrexia2(3.23%) Vs5(8.07%) and Pain 27 (43.55%) Vs 34 (54.84%) which is compatible with the current study. And in the study by **Verma et al (2016)** compared the treatment with medical (600mcg Misoprostol intra-vaginally, single dose) and surgical methods (vaginal surgical evacuation of the uterus under local anesthesia) for management of spontaneous incomplete and missed miscarriage in 1st trimester (5-12 weeks). Misoprostol treated group showing more and extended bleeding and 27% of had moderate bleeding, while in surgical evacuation which done under local anesthesia, the bleeding was less but accompanied by a severe pain and weakness in 98% of patients. All of these studies matched the current study.

According to the **endometrial thickness, Before treatment**, the mean of endometrial thickness was 22.1 ± 3.4 mm, 21.9 ± 3.5 mm and 21.8 ± 3.8 mm in groups I, II and III, respectively with a non-significant differences ($p > 0.05$) among the studied groups. **After treatment**, the mean of endometrial thickness was 9 ± 2.5 mm, 9.4 ± 2.6 mm and 9.8 ± 2.8 mm in surgical, Misoprostol and expectant groups, respectively, with a non-significant differences ($p > 0.05$) among the studied groups. The study by **Shokry et al (2014)** compatible with the current study in founding no significant differences in endometrial thickness after treatment (Misoprostol group 8.43 ± 0.49 Vs ERPC group 6.03 ± 0.39).

As regards **results of treatment**, Success rate was 96%, 90%, 80% in group I, group II and group III respectively, failed treatment was in 4 patients in group I and need re-evacuation, in 10 patients in group II and in 20 patients in group III and need surgical management. The difference in failure rate between the studied groups was statistically significant.

Tahir et al (2018) Efficacy rate in MVA group (97.1%) was significantly higher as compared to Misoprostol group (93.9%) which is compatible with the current study. **Hameed et al (2016)** A prospective comparative study of a total of 100 pregnant women with an estimated gestation age of up to 13 weeks from the last menstrual period (LMP) after confirmation of the diagnosis by transvaginal sonography, the patients were divided into two groups: expectant and medical management groups. Aim to study patients with first trimester incomplete miscarriage and to evaluate whether expectant or

medical management is a feasible strategy. By 4 weeks after inclusion, 42 (84%) patients in the expectant management group had undergone a spontaneous complete miscarriage and 8 (16%) had undergone surgical evacuation. While in the medical management group, 46 (92%) patients had undergone complete miscarriage and 4 (8%) had undergone surgical evacuation which is compatible with the current study. **Sajan et al (2015)** In the expectant group the cumulative success rate was 71% as against 97% in surgical group, which is compatible with the current study. **Tripathi et al (2018)** Success rate of MVA group was 100% and for Misoprostol group was 67.7% with statistically significant difference ($p < 0.05$) which against the current study in success rate of misoprostol. **Ara et al (2018)** A total of 100 women with first- trimester pregnancy loss underwent either an MVA (n=50) or an ERPC (n=50). The study compare the efficacy and safety of evacuation of Retained products of conception (ERPC) and Manual Vacuum Aspiration (MVA) in women experiencing a first trimester miscarriage. The success rate for both treatment modalities was comparable between the two interventions. Overall, the efficacy was 98% for MVA and 94% for ERPC (p-value, 0.61) also match with the current study. **Dars et al (2017)** By the 7th day 52 (83.87%) subjects in misoprostol group expelled products of conception completely whereas in expectant management group 30 (48.39%) subjects expelled products, with statistically significant difference (p value < 0.001) which is compatible with the current study. **Ireland et al. (2015)** Efficacy of pregnancy termination was 99.6% for medication abortions and 99.8% for surgical abortions which is compatible with the current study. **Verma et al. (2016)** reported 97% success with Misoprostol and 95 % in surgical evacuation which differ from this study as found success rate of misoprostol higher than surgical evacuation, which differ from the current study. A meta-analysis by **Al-Ma'ani et al. (2014)** compared two methods for the management of first-trimester incomplete or missed miscarriage by using expectant (Gr.I) and surgical (Gr.II) methods with regarding to the efficiency and safety. The result showed that the success rate was high in group II than group I (95.7 vs 81.4%; $P = 0.0029$) which is compatible with the current study.

According to the **duration of hospitalization**, most of patients in group stayed in hospital for less than 12 hours, whereas some patients, the hospitalization period extended from 13 up to 24 hours and more than 24 hours for only 1 patient for conservation after perforation, group II and group III were treated as outpatient as long as there is no severe bleeding or severe pain. In the study by **Madoue et al**



(2016) compared the efficiency of two methods for management of incomplete abortion, manual vacuum aspiration (MVA) under local anesthesia and misoprostol (400 micrograms intra-vaginally). The results showed that the maximum of patients in MVA group, stayed in hospital for >12 hours which coordinate with the present work, whereas, the hospitalization period in the misoprostol group, was extended for 13 – 24 hours in about 2/3 of patients and for < 24 hours for 1/3 of patients which differ from the current study. There was significant differences among studied groups in the duration of hospitalization.

As regards **complications**, there were statistically a high significant difference between the three studied groups regarding excess bleeding, a significant difference regarding reevacuation and non-significant differences regarding perforation and foul smelling and vaginal discharge. No patient was diagnosed with Asherman's syndrome.

The study by **Sajan et al (2015)** The excessive bleeding in 2 groups was significantly different ($p<0.05$) among the two groups. Five patients in each group had excessive bleeding of them 2 patients in surgical needed blood transfusion, but not required blood transfusion in expectant group. Regarding the rate of emergency evacuation of the uterus, it was averaged 9% and 1% in expectant and surgical groups, respectively with significant differences ($p<0.05$). In surgical evacuation group, no occurrence of uterine perforation or cervical tear during the operation which is compatible with the current study. **Ara et al (2018)** Heavy bleeding was found significantly associated with ERPC (48%) compared to MVA (16%) (p -value, <0.001) which is compatible with the current study. **Verma et al (2016)** Five patients required a Re-evacuation in the surgical group and only three in the medical group which against this study. The reason most probably was the procedure being blind and affected by the pain experienced by the patients in the surgical group. There was one perforation in the surgical group which was conservatively managed as the patient was stable hemodynamically which is compatible with the current study. **Nadarajah et al (2014)** The main complication in the expectant group was bleeding requiring emergency admission and most of these patients required unplanned surgical evacuation which is compatible with the current study. The incidence of endometritis was comparable in both groups: 4% in the surgical and 3% the conservative group. **Al-Ma'ani et al (2014)** The pelvic infection was significantly lower in the expectant than the surgical group (1.9 vs 3.5 %, respectively; $P = 0.0146$) against the current study. One (0.9 %) case of uterine perforation occurred in the surgical group which is compatible with the current study. **Lemmers et al**

(2017) studied the efficacy of curettage versus misoprostol in management of first trimester miscarriage using an expectant method in women with an incomplete evacuation after misoprostol treatment. The study found that the complication rates were averaged 6.2 and 2.3% in curettage and expectant management groups, respectively, without a significant differences between the two groups. Women for the 1st pregnancy (A primigravida) treated by curettage and didn't performed surgery in the uterus was diagnosed with Asherman's syndrome within three months after participating in the investigation. In the curettage group, there were 11 patients against 24 women who managed expectantly had a re-intervention by second curettage, hysteroscopy or both, there were statistically non-significant difference between the two studied groups which against the current study. And **Ireland et al. (2015)** Overall, 29 women (20 surgical and 9 medical), or 0.1% of the total sample, experienced one of these complications (emergency department presentation, hospitalization, uterine perforation, infection, and hemorrhage requiring transfusion) and found that the risk was higher in the medical abortion group than the surgical abortion group which is compatible with the current study.

There were statistically significant difference between the three studied groups regarding **patient satisfaction**. Satisfaction was 85%, 95% and 80% in group I, group II and group III respectively and this is supported by the study by **Verma et al (2016)**, Majority of patient i.e.100% of medical group and 76% patients in the surgical group were of complete plus partial satisfaction. **Nadarajah et al (2014)** which also founded that Both groups had similar satisfaction rates. **Dars et al (2017)** Forty-nine (79.03%) women in misoprostol group expressed satisfaction towards the treatment whereas only 21 (33.87%) women in expectant management group showed satisfaction towards the treatment, and **Sajan et al (2015)** The level of satisfaction between the two treated groups was differ significantly, the dissatisfaction percent was reached 26% and 20% in expectant and surgical groups. In contrast with the finding of **Shokry et al (2014)** study, in which the overall satisfaction was slightly higher in the surgical group, but almost equal percentage of both groups mentioned that they will recommend the method to a friend.

Conclusion

Misoprostol is found to be as effective as surgical treatment in the treatment of incomplete miscarriage, at a single dose of 200 mcg, with complete evacuation of uterus in most women, and the side effects can be

tolerated by all patients. Women are highly accepted and satisfied with the medical therapy (Misoprostol treatment) as the bleeding was more or less identical to menstrual cycle bleeding which did not influence the daily tasks of the women and also due to disdesire to stay in the hospitals. The effectiveness of medical therapy was similar to surgical evacuation, whereas, the satisfaction was higher than the surgical evacuation.

Expectant management has lower effectiveness compared to other treatment options.

Recommendations:

- A single dose of 200 mcg misoprostol given as outpatient treatment may be used as first line in management of incomplete abortion.
- Further studies are recommended to compare between different doses and different routes as regards efficacy and incidence and tolerability of side effects of misoprostol.

References

1. Edwards S, Birks M, Chapman Y and Yates K (2016): Miscarriage in Australia: The geographical inequity of healthcare services. *Australasian Emergency Nursing Journal*, 19(2):106-111.
2. Kim C, Barnard S, Neilson JP, Hickey M, Vazquez C, Dou L (2017): Medical treatments for incomplete miscarriage. *Cochrane Database of Systematic Reviews*, 1:CD007223.
3. H Al Wattar B, Murugesu N, Tobias A, Zamora J and Khan KS (2019): Management of first-trimester miscarriage: a systematic review and network meta-analysis. *Human Reproduction Update*, 25(3):362-74.
4. Singh RH, Montoya M, Espey E and Leeman L (2017): Nitrous oxide versus oral sedation for pain management of first-trimester surgical abortion - a randomized study. *Contraception*, 96(2):118-23.
5. Gülmezoglu MA, Eapen A, Coomarasamy A, Deeks J, Tobias Garces A, Eyo M, Tunçalp Ö, Williams H and Gallos I (2017): Methods for managing miscarriage: a network meta-analysis, 3.
6. American College of Obstetricians and Gynecologists (2014): Practice bulletin no. 143: medical management of first-trimester abortion. *Obstetrics and Gynecology*, 123(3): 676.
7. Kapp N, Eckersberger E, Lavelanet A and Rodriguez MI (2018): Medical abortion in the late first trimester: a systematic review. *Contraception*, 25(9):25-29.
8. Velipasaoglu M, Ozdemir CY, Ozek B, Ayaz R and Tanir HM (2018): Sequential use of Foley catheter with misoprostol for second trimester pregnancy termination in women with and without caesarean scars: a prospective cohort study. *J Matern Fetal Neonatal Med.*, 31(5):677-681.
9. Song LP, Tang SY, Li CL, Zhou LJ and Mo XT (2018): Early medical abortion with self-administered low-dose mifepristone in combination with misoprostol. *Journal of Obstetrics and Gynaecology Research*, 44(9):1705-1711.
10. Lemmers M, Verschoor MAC, Oude Rengerink K, Naaktgeboren C, Bossuyt PM, Huirne JAF et al. (2017): Miso REST: Surgical versus expectant management in women with an incomplete evacuation of the uterus after misoprostol treatment for miscarriage: A cohort study. *Eur J Obstet Gynecol Reprod Biol.*, 211: 83-89.
11. Brady PC and Pocius KD (2016): Spontaneous Abortions. In *Handbook of Consult and Inpatient Gynecology* (pp. 179-200). Springer, Cham.
12. Zhuo Z, Yu H, Gao L and Jiang X (2019): Effectiveness of misoprostol administration for cervical ripening in women before operative hysteroscopy: a randomized, double-blinded controlled trial. *Minimally Invasive Therapy & Allied Technologies*, pp:1-7.
13. Song L, Shen L, Mandiwa C, Yang S, Liang Y, Yuan J et al. (2017): Induced and Spontaneous Abortion and Risk of Uterine Fibroids. *Journal of Women's Health*, 26(1):76-82.
14. Hang-lin Wu, Sheeba M, Pei W et al. (2017): Misoprostol for medical treatment of missed abortion: a systematic review and network meta-analysis. *Sci Rep.*, 7:1664.
15. Saav I, Kopp Kallner H, Fiala C, Gemzell-Danielsson K (2015): Sublingual versus vaginal misoprostol for cervical dilatation 1 or 3 h prior to surgical abortion: a double-blinded RCT. *Human Reproduction*, 30 (6):1314-22.
16. MacCormac O, Edwards A, Forsyth M, Ti F and Deb S (2018): Comparison of Manual Vacuum Aspiration to Traditional Methods of Managing Early Pregnancy Miscarriage: How does MVA compare to alternative methods of miscarriage management?. *Cogent Medicine*, 5(1):1484601.
17. Ireland LD, Gatter M and Chen AY (2015): Medical compared with surgical abortion for effective pregnancy termination in the first trimester. *Obstet Gynecol.*, 126:22-8.
18. Al-Ma'ani W, Solomayer EF and Hammadeh M (2014): Expectant versus surgical management of

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- first-trimester miscarriage: a randomised controlled study. Archives of Gynecology and Obstetrics, 289(5):1011-1015.
19. Saeed S, Manzoor R, Tazion S, Butt F and Badar N (2018): Misoprostol for 1st Trimester Miscarriage: Efficacy of Vaginal Versus Oral Misoprostol. Pakistan Journal of Medical &

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- Health Sciences, 12(2):849-852.
20. Verma M, Thakur V and Awasiya P (2016): A comparative study of misoprostol versus surgical management of incomplete and missed miscarriage. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 5(11):3654-3658.

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