

Medical Versus Surgical Treatment of Incomplete First Trimestric Abortion

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Abstract

Objective: to assess efficacy and risks of medical treatment of incomplete abortion using misoprostol versus surgical procedures.

Methods: A prospective comparative study included 208 women with incomplete abortion with gestational age between 5th and 12th week randomized equally to two groups Group I received 600 micro gram misoprostol as single oral dose and Group II underwent surgical dilatation and evacuation. Primary outcome was successful treatment all women give a written acceptance of being involved in the trial.

Results: There was no statistically significant difference between Misoprostol and surgical groups regarding endometrial thickness evaluated after treatment (10.5 ± 2.65 versus 9.3 ± 1.97 respectively, where P value 0.251 Non significant), treatment failure (11 versus 6 respectively, where P value 0.071 Non significant), those with blood loss more than 500 cc (1 versus 3 respectively, where P value 0.482 Non significant) and those who needed recurrettage ((11 versus 6 respectively, where value 0.064 Non significant). Side effects of treatment showed no statistically significant difference between the studied women (fever occurred in 3 versus 1, IUS in 0 versus 1 and vomiting occurred in 1 versus 3 in medical versus surgical women respectively, where P value > 0.05) except diarrhea which was much more common in women under Misoprostol treatment (28 versus 0 respectively, where value < 0.001).

Conclusion: Medical treatment is effective and acceptable and less costly than surgical treatment in women with incomplete abortion.

Keyword : Pregnancy. Misoprostol . Abortion in Nassiriyah

Introduction

Abortion derives from the Latin aboriri—to miscarry. Definition of abortion (Miscarriage) is the spontaneous or induced termination of pregnancy before viability of the fetus [1].

Miscarriage is the most common complication of early pregnancy, and remains an important clinical problem. Approximately 20% of women attending early pregnancy department suffer a miscarriage [2]. Nearly 50% of pregnancies are lost in the early stages and

15% of fertilized oocytes will fail to implant [3] beside the loss of 20–25% of pregnancies without clinical prediction. [4]. These percentages suggest abortion rate of 12–19% being detected clinically [5]. Bleeding that follows partial or complete placental separation and dilation of the cervical os is termed incomplete abortion. Prior to 10th week of pregnancy duration, the fetus and the placenta are frequently expelled together, but later, they deliver separately [1].

Unless there is serious bleeding or infection with an incomplete abortion, any of three options are reasonable—expectant, medical, or surgical management. Each has its own risks and benefits—for example, the first two are associated with unpredictable bleeding, and some women will undergo unscheduled curettage. Expectant management of spontaneous incomplete abortion has failure rates as high as 50 percent. Medical therapy has varying failure rates of 5 to 40 percent. In 1100 women with suspected first-trimester abortion, 81 percent had a spontaneous resolution [6]. Curettage usually results in a quick resolution that is 95- to 100-percent successful. It is invasive and not necessary for all women.

It is possible that patients and clinicians option for surgical methods when there is not a strict protocol for medical treatment [7]. Several randomized studies that compared

these management schemes were reviewed by Neilson (2010)[8]. Studies that included women with vaginal bleeding reported greater success for medical therapy than did studies that excluded such women [9]. Importantly, Smith and coworkers (2009) reported that subsequent pregnancy rates did not differ among these management methods [10].

Misoprostol was administered to treat gastric ulcer in those who use certain analgesics. At the present time, it is used more often to enhance uterine contractility. Nowadays, clinicians prescribe it for aborting women instead of surgical intervention [11]. The medical treatment of abortion, that is almost 95 % successful to expel all products of conception completely in the early stages of pregnancy, has been developed as a realistic alternative to surgical evacuation [12]. The method involves the combinations of mifepristone, antagonist of progesterone, and misoprostol, with chemical similarity to prostaglandin E1 shows a cheaper alternative to surgery [13]. This study was done to assess risks and benefits of medical treatment of incomplete abortion with misoprostol versus surgical procedures.

Patients and Methods

This prospective comparative study included 208 women who attended the outpatient clinic and casualty at Al-Habobi Teaching Hospital in Thi qar

province/Iraq, between March 2015 and August 2016. Ethical approval was obtained from the regional committee and all women give a written acceptance of being involved in the trial.

The 208 women included in the present study confirmed to be pregnant and presenting with spontaneous first trimestric miscarriage complaining of mild or moderate vaginal bleeding with Gestational age between 5th and 12th week calculated based on the date of the last menses and confirmed by ultrasound examination. Women with severe vaginal bleeding, haemodynamic unstable, missed or complete abortion, ectopic pregnancy or gestational trophoblastic disease were excluded from the study. Patients with signs of sepsis and those with contraindication to misoprostol or prostaglandins were also excluded from the study.

All participants were subjected to full history taking including age, LMP for confirmation of gestational age, medical disorders and history of previous abortions, general, abdominal and local examinations. PV and bimanual examination to detect size of uterus, its position, mobility and any cervical mass or adnexal masses.

Transvaginal ultrasound was done to all participants using 5 MHZ transvaginal probe to assess uterine size, endometrial thickness, uterine

cavity and presence of remnants. Automated web-based randomization system was used to distribute the women equally into one of the study groups. Group I (104 patients) medically treated as outpatient received 600 µg misoprostol (misotac®) as single oral dose [14]. Group II included 104 patients underwent surgical dilatation and evacuation. All patients were 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 vaginal bleeding and TVS showed clear endometrial line with thickness equal to or less than 12 mm [12]. Primary outcome was successful treatment. Secondary outcomes included side effects and patients satisfaction.

Describing data was done through mean \pm standard deviation (\pm SD), and range, or frequencies and percentages as needed. t test was used to compare the different methods of estimating gestational age was done. Accuracy of different estimation parameters in relation to the LMP parameter was done within 1 week error. Statistical significance was confirmed at p values less than 0.05. SPSS 15 program was used for statistical analysis (Statistical Package for the Social Science; SPSS Inc., Chicago, IL, USA) for Microsoft Windows (2006).

Results

No significant difference was found between the two groups considering age, parity, BMI and gestational age, the presence of medical disorders as hypertension and Diabetes mellitus showed no statistical difference when comparing women in the two groups, Examination of women showed no variations when comparing the 2 groups in their relations with vital signs, vaginal bleeding quantity, the existence of lower abdominal pain or endometrial thickness evaluated by TVS as shown in (Table 1).

Table (1): Baseline characteristics of the study population

		Misoprostol group (n = 104)	Surgical evacuation group (n =104)	P value
Age (years)		27.41±5.32	26.82±5.98	0.56 1 NS
Parity		2.62±1.28	2.9±1.31	0.51 3 NS
BMI (Kg/m2)		27.9±3.63	28.71±3.78	0.49 2 NS
GA (weeks)		9.87±1.65	8.9±1.86	0.37 1 NS
Vital signs	SBP	124.2±5.58	118.7±6.79	0.35 4 NS
	DBP	76.7±4.91	73.8±4.86	0.12 7 NS
	HR	81±3.58	82.5±4.04	0.11 NS
	Temperature	37.1±0.08	36.9±0.08	0.87 5 NS
Medical disorders*	None	92	93	0.89
	Hypertension	8	7	8 NS
	Diabetes mellitus	4	4	
Bleeding*	Mild	74	69	0.75
	Moderate	30	35	2 NS
Lower abdominal Pain*	Yes	83	79	0.67
	No	21	25	7 NS
Endometrial thickness		20.8±3.58	21.3±2.91	0.78 3 NS

Data presented as mean± standard deviation.

* Data are presented as number percent.

BMI Body mass index; GA Gestational age ; SBP Systolic blood pressure ; DBP Diastolic blood pressure ; HR Heart rate; NS non significant.

No statistically significant difference was found between the two groups regarding endometrial thickness evaluated after treatment, treatment failure, those with blood loss more than 500 cc and those who needed recurettage, the side effects of treatment showed no significant difference between women in different groups apart from diarrhea that occurred more commonly in women under Misoprostol treatment (Table 2).

Table (2): Outcome parameters among the study groups.

		Misoprostol group(n= 104)	Surgical evacuation group(n=10)	P value
Failure		11	6	0.071 NS
Endometrial thickness*		10.5±2.65	9.3±1.97	0.251NS
Bleeding > 500cc		1	3	0.482 NS
Complications	Fever	3	1	0.652 NS
	IUS	0	1	0.784 NS
	Diarrhea	28	0	<0.001 HS
	Vomiting	1	3	0.584 NS
Need for recurettage		11	6	0.064 NS
Have no complication		49	84	

Data are presented as number percent.

* Data presented as mean± standard deviation.

IUS Intrauterine synechia; NS Non significant; HS Highly significant.

Discussion

Early pregnancy failure is a common occurrence, affecting one-third of early pregnancies and one-fourth of all women [16]. Complications associated with abortion whether induced or spontaneous are one of the main reasons of maternal hazards [17]. One

of the usual hazards of early pregnancy is abortion. It has risks whether medically or psychologically. [18]. Our study confirmed that medical treatment of incomplete abortion is equally effective as surgical treatment with comparable side effects. That was clear as failure of medical treatment occurred in 11

women while it occurs in 6 women who underwent surgical treatment and women with successful treatment had closely similar endometrial thickness evaluated after treatment. Also complications of treatment as fever, development of intrauterine synechia (only 1 case after surgical treatment came 3 months after evacuation complaining of hypomenorrhea and hysteroscopic evaluation revealed mild intrauterine adhesions) and vomiting were comparable among the two study groups. These finding can be explained by the ability of Misoprostol to induce effective uterine contraction at any gestational age. Zhang and colleagues (2005) demonstrated that misoprostol is an acceptable alternative to vacuum aspiration for failure of the early pregnancy treatment with success rate of medical management was 84% compared to the 97% success of surgical management [19]. Behnamfar and colleagues (2013) study included 133 women with missed abortion of smaller than 12 weeks gestational age , they was given 800 mcg of vaginal misoprostol with reported rate of success of 92.4% [20]. In a systematic review, Neilson and colleagues (2010) assessed cases with incomplete abortion regarding success ,reliability of the medical treatment and stated that misoprostol and expectant treatments are good replacement of the surgical management. In a more recent systematic review, the same authors analyzed 12 studies comparing

misoprostol with surgical evacuation and reported a lower rate of success with misoprostol to achieve complete uterine evacuation than surgery but high rate of success for either misoprostol or surgery methods [21]. In a randomized controlled trial, to evaluate the results of medical treatment of missed miscarriage in 241 women at gestational ages smaller than 13 weeks' gestation, failure of medical treatment was reported in 13.3% and complete evacuation was achieved in 78.0% of them [22]. The main strength in our study is the absence of dropout cases and availability of most data needed for analysis. Medical treatment is a good alternative and cheaper to surgical one. It is less costly than surgical treatment [23]. It can be used as an outpatient and inexpensive treatment option, which is available on demand and easy to use [24]. A non surgically skilled physician can prescribe the medical treatment making it easier to access these patients, lowering hospital financial costs and saving more skilled health care providers time [25,26]. Surgical interventions need a skilled surgeon and equipped centers [27]. This seems even more important in view of the long-term consequences of curettage, which were beyond the scope of our present study. An earlier meta-analysis showed that 19% of women develop intrauterine adhesions (Asherman syndrome) after undergoing curettage, which might impair future fertility in particular in

case of dense adhesions [28]. Another recently performed metaanalysis demonstrated an increased risk of preterm birth in subsequent pregnancies of women with a history of curettage (OR 1.3, 95% CI 1.2–1.4). The subsequent risk of very preterm birth <28 weeks is increased even more (OR 1.7, 95% CI 1.5–1.9) and of concern in view of the frequent use of curettage in daily practice [29]. For every four women who were managed expectantly in our study, 3 of them were able to avoid undergoing a surgical procedure, while in 2 out of 30 women treated with curettage, a second intervention was performed. Furthermore, since histopathology only confirmed the presence of pregnancy tissue in one third of samples, it is likely that the proportion of women with successful expectant management is higher than currently reported [30]. We concluded that medical treatment is effective and acceptable and less costly than surgical treatment in women with incomplete abortion.

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مقارنة العلاج الدوائي مقابل العلاج الجراحي لعدم اكتمال الإجهاض في الفصل الاول

الخلاصة

الهدف: هو تقييم فعالية وسلامة العلاج الطبي (الدوائي) للإجهاض غير مكتمل باستخدام الميسوبروستول مقارنة بالعمليات الجراحية.

طرائق العمل: شملت دراسة مقارنة ٢٠٨ امرأة عانين من الإجهاض خلال الأشهر الثلاث الأولى من الحمل للفترة بين الاسبوع الخامس و الاسبوع الثاني عشر من عمر الجنين التي تم اختيارها عشوائيا على قدم المساواة إلى مجموعتين المجموعة الأولى تلقت ٦٠٠ ميكروغرام الميسوبروستول كجرعة واحدة عن طريق الفم والمجموعة الثانية خضعت لتوسع العمليات الجراحية والإخلاء. وكانت النتيجة الأولية نجاح العلاج.

النتائج: لم تكن هناك فروق ذات دلالة إحصائية بين استخدام ميزوبروستول و التداخل الجراحي فيما يتعلق سمك بطانة الرحم والتي تم تقييمها بعد العلاج (١٠.٥ ± ٢.٦٥ مقابل ٩.٣ ± ١.٩٧ على التوالي، غير مهم (non significant) كقيمة ناتجة للاحتمالية ، فشل العلاج (١١ مقابل ٦ على التوالي، قيمة ف ٠.٠٧١ م) مع المريضات اللاتي فقدن كمية من الدم أكثر من ٥٠٠ سم مكعب (١ مقابل ٣ على التوالي، قيمة ف ٠.٤٨٢ م) وأولئك الذين هم في حاجة الى اعادة الكورتاج ١١ مقابل ٦ على التوالي، قيمة ف ٠.٠٦٤ م). اظهرت الدراسة عدم وجود فروق معنوية فيما يخص الآثار الجانبية للعلاج بين المجموعتين (حدث حمى في ٣ مقابل ١ IUS (النصاق بطانة الرحم) في صفر مقابل ١، وحدث القيء في ١ مقابل ٣ في النساء اللواتي استخدمن الميزوبروستول مقارنة باللائي خضعن للتداخل الجراحي على التوالي، قيمة $P < 0.05$) باستثناء الإسهال الذي كان أكثر شيوعا في النساء تحت العلاج الميسوبروستول (٢٨ مقابل ٠ على التوالي، قيمة $P < 0.001$).

الاستنتاج: ثبت من خلال الدراسة ان العلاج الدوائي كان فعالا و مقبولا وأقل تكلفة من التداخل الجراحي في النساء اللواتي يعانين من عدم اكتمال الحمل(الإجهاض).