Comparison of Medical (Misoprostol) and Surgical Management for Terminating of First Trimester Missed Abortion

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Abstract: To compare misoprostol with curettage in termination of missed abortion (up to 12 week's conception) this study was designed. Eighty women with missed abortion were assigned after random list to be treated with 800 mcg misoprostol intravaginally first and then 400 mcg q.4h up to 3 doses if was needed (Medical group n = 40) or dilation and sharp curettage (Surgical group n = 40) for terminating of first trimester missed abortion. Thirty five cases (87.5%) in medical group had complete abortion without any need to curettage and in 37 cases (92.5%) in surgical group the uterus was evacuated completely by sharp curettage. This difference was not statistically significant. Duration of bleeding in medical group was significantly more than surgical group. There was no significant difference in hemoglobin level after abortion between two groups. The most complications in medical group were lower abdominal pain and fever. We concluded misoprostol 800 mcg intravaginally (400 mcg q.4h up to 3 doses, if needed) may offer an efficacious and safe alternative to the surgery and we recommend this method for terminating of first trimester missed abortion.

Key words: Misoprostol, missed abortion, uterine curettage

INTRODUCTION

Early pregnancy failure—also known as blighted ovum, early fetal death, or missed abortion—complicates 15-20% of all pregnancies (Kovavisarach and Jamnansiri, 2005). Uterine curettage has been traditionally used as the surgical method of treatment. It is associated with a 4% to 10% rate of hemorrhage and infection. Uterine adhesions, impaired fertility, cervical trauma, uterine perforation and anesthesia errors are also other potential sequelae of curettage (Muffley et al., 2002). Recently, alternatives have been proposed, such as medical treatment by misoprostol, to improve patient satisfaction and to reduce complications and costs generated by surgery (Beucher et al., 2003). In series of studies success rate of vaginal misoprostol for terminating early pregnancy failure was reported up to 90% (Beucher et al., 2004; Graziosi et al., 2004; Ngoe et al., 2004; Borgatta et al., 2004). However, some studies reported lower success rate (Szymanska et al., 2003). On the other hand there are different reports about the complications of this drug (Kovavisarach and Jamnansiri, 2005; Coughlin et al., 2004) and (Zou et al., 2004). Because of controversial reports about efficacy and complications of misoprostol and to determine weather medical treatment of early pregnancy failure represents a reasonable alternative surgical therapy, this study was designed.

MATERIALS AND METHODS

After obtaining approval from our local IRB and written informed consent 80 patients (mean age 19-42 years) who were diagnosed with missed abortion (confirmed by ultrasonography) were randomly assigned to receive either medical (intravaginal misoprostol) or surgical (dilation and sharp curettage) therapy in Shabih Khani gynecological hospital in Kashan (IRAN) in 2004. All patients examined by gynecologist. Patients who had cardiac disease, hypertension, asthma, glaucoma, inflammatory bowel disease, controlled epilepsy, hypersensitivity to prostaglandin E, severe hepatic disease, lactation period, excessive bleeding and dilated internal cervical os were excluded from the study.

In surgical group patients (control group), dilation and sharp curettage was performed. If cervical dilation was not possible in operating room, patient would undergo medical treatment and follow up till complete recovery, but she did not consider as a participant in medical (case) group. In medical group (case group), initially 800 mcg of misoprostol was placed within the posterior vaginal fornix and as required, it was repeated 400 mcg every 4 h up to 3 doses.

During the treatment period, from the administration of the first dose to 4 h after the last dose, patients' vital signs (blood pressure, pulse rate, temperature) were being
controlled and recorded every 1 h. Abdominal pain was relieved with meperidine 50 mg (intramuscularly) or diclofenac suppository 100 mg (rectally) and fever (T>38°C) with acetaminophen (325 mg) q.4 h.

In the case of heavy bleeding during the treatment, the patients underwent curettage. By 24 h after administrating of initial dose, if the pregnancy was not completely aborted at this time, treatment was considered as a failure of therapy and uterine curettage was performed but the patient didn't enroll in surgical arm of study.

Patients in each group were discharged the next morning with follow up care card. If patients’ Rh was negative, anti D immunoglobulin amoule was administered intramuscularly.

The complications of medical or surgical treatment were recorded on a data sheet. In surgical group, doxycyclin was administered for the short period of time after the operation. In medical group 15 days after the initial dose of misoprostol sonography was performed and if products of conception was present, curettage would be carried out. If abnormal bleeding or signs of infection was observed in surgical group, ultrasonography would be performed and if pregnancy products existed, curettage would be conducted again.

Hemoglobin level assessed at the time of admission and 15 days later. The patients were asked about the duration and severity of bleeding.

Statistical analysis was performed with chi-square analysis, fisher’s exact test and paired t-test.

RESULTS AND DISCUSSION

There was no statistically significant difference regarding demographic or clinical characteristics between two groups (Table 1). Complete expulsion of conception was less in medical than surgical group, but this different was not significant (Table 2).

In medical group the mean time from the initial dose of misoprostol to start of bleeding was 4.8±2.5 h and the mean time from first dose to expulsion of pregnancy products was 10±3.4 h. Duration of bleeding period after procedure was greater in medical than in surgical group, but there was no significant difference between two groups regarding hemoglobin levels before and after abortion (Table 3).

Neither of the patients in both groups need blood transfusion. The most complication in medical group were abdominal pain and fever (Fig. 1) and the most serious complication in surgical group was uterine perforation occurred in one case. Other important complications after curettage were heavy bleeding (1 case), cervical laceration (1 case), remained products of conception and infection (1 case), undilated cervix (2 cases), shivering (2 cases) and vomiting (2 cases).

Several clinical trials have evaluated the use of misoprostol alone for the termination of early pregnancy failure (Jain et al., 2001; Muffley et al., 2002; Wood et al., 2002; Prasartsakulchai and Tannirandom, 2004).

The success rate reported in the most of them (60-90%) depended on dosage and the mode and frequency of drug administration. The complete abortion rate in this study (87.3%) was close to that obtained by Ngai et al. (2001), Wood et al. (2002), Bagratee et al. (2004) and Phupong et al. (2004).
Lower successful rate (30.3%) for misoprostol, reported by Szymanska et al. (2003). Compare to our study they used 400 mcg rather than 800 mcg and this success variation maybe due to this reason.

Differences in initial dosage, time intervals during drug administration, methods of drug administration, populations and criteria for diagnosis of incomplete abortion were suggested to be relevant in explaining differences in out come (Kovavisarach and Jamnansiri, 2005).

There was no occurrence of life threatening bleeding and no subject required transfusion in both groups. This finding is similar to findings of Singh et al. (2003), Wood et al. (2002), Muffley et al. (2002) and Davis et al. (2004).

There maybe additional benefit with misoprostol even if the treatment is not completely successful. Two cases in medical arm of present study needed curetage and no cervical dilation was required for them, because they had dilated cervix at the time of surgery. In such cases, The risk of perforation and cervical laceration would be decreased.

In this study, there was low incidence of side effects and complications such as fever and abdominal pain and they were tolerable and treated easily. Vomiting was not reported by any of women enrolled in medical group of study.

Finally, this study suggests misoprostol 800 mcg intravaginially (400 mcg up to 3 doses if needed) may offer an efficacious and safe alternative to the surgery.

REFERENCES


