Choice of treatment to manage early miscarriage does not affect future fertility

Authors: Susanna Savukoski, M.D.,[a,b], Maarit Niinimäki, M.D., [a,b]

[a]Department of Obstetrics and Gynaecology, PEDEGO Research Unit, Oulu University Hospital and University of Oulu, 90029 OYS, Finland; [b]Medical Research Centre Oulu, Oulu University Hospital and University of Oulu, 90014 Oulu, Finland.

The authors received no financial support for writing this commentary and declare no conflict of interest.

A study by Tzur et al. (1) compared short-term fertility outcomes of surgically vs. medically treated women with early miscarriage. The study population included 203 women diagnosed with early pregnancy loss. The treatment protocol was chosen based on patient preference. 106 women were treated with curettage and 97 with a medical protocol including 800 micrograms (µg) of misoprostol. Short-term pregnancy rates and outcomes did not differ between the study groups: pregnancy rates within 6 months median time-to-pregnancy intervals, as well as pregnancy rates within 12 months and proportion of pregnancies ending in live birth, did not differ between surgically vs. medically managed patients. As discussed in the article, earlier studies have reported similar long-term fertility outcomes between these two protocols for treating early pregnancy loss, and the findings of short-term outcomes by Tzur et al. (1) concur.

Medical, surgical, and expectant management are all possible ways to treat early miscarriage. A meta-analysis by Al Wattar et al. (2) reported that the effectiveness of medical and surgical treatments are equal, while expectant management was less efficient. With expectant management, the time to the expulsion of pregnancy material from the uterus is impossible to predict, so patients tend to favor active treatment. Long-time fertility outcomes have been reported to be equal after these three managements, and 4/5 of women with first trimester miscarriage have a live birth within five years, regardless of the treatment protocol used. A higher number of miscarriages and older age impair the likelihood of giving birth in the future. (3) Most women facing miscarriage wish to conceive again within a short period: Tzur et al. (1) reported that 89.1% of the women in their study tried to conceive immediately. It is known that surgical management is the fastest way to evacuate the uterus, but like any operation, it carries a risk of more severe complications, including adhesions in the uterine cavity, which are a serious threat to future fertility. Even perforation of the uterine wall, bowel, and bladder, as well as cervical trauma, are possible. Potential complications related to anesthesia should also be kept in mind. Surgical management is more expensive and requires more health care resources. Medical treatment has been reported to be an efficient and sufficient treatment for the majority of patients with early pregnancy loss: in a study by Zhang et al., (4) 491 women with first-trimester pregnancy failure received 800 µg misoprostol vaginally, and 84% of them were reported to have complete expulsion of pregnancy material from the uterus within one week from misoprostol administration.

More pain and patient dissatisfaction are reported related to medical compared to surgical treatment of early miscarriage (5). Studies have reported that 70-78% of medically treated patients would choose the same treatment again if needed (4,5). A Finnish study reported that 91% of surgically treated patients would choose surgical management for miscarriage also in the future (5). There is some proportion of patients with medical treatment who go through curettage afterward due to insufficient evacuations of the uterus. In the study by Tzur et al. (1), 22.7% of patients from medically treated groups were diagnosed with treatment failure (intrauterine gestational sac one week after the second misoprostol dose or suspected retained pregnancy material in transvaginal ultrasound after the next menstrual period or six weeks after the misoprostol treatment). These women were treated operatively: 2/3 with hysteroscopy and 1/3 with curettage. 2.8% of women who were treated with curettage in the first place underwent hysteroscopy because of incomplete evacuation of the uterus. Understandably, women who wish to conceive again as soon as possible prefer active and efficient management if the result of the first treatment for miscarriage is inadequate.

It is justifiable that medical treatment is a first-line treatment for early miscarriage. Medical treatment is cost-effective, can usually be initiated at the visit when the miscarriage is diagnosed, potential complications of curettage and anesthesia are avoided, and the treatment outcomes are satisfactory for most of the patients. There are some differences in the treatment protocol of medical evacuation of the uterus: In a study by Tzur et al. (1), transvaginal ultrasound was repeated on days 5 and 7. If the evacuation of the uterus was incomplete, a second dose of vaginal misoprostol 800 µg was administered. In their treatment protocol, medical treatment did not include mifepristone. Some studies have reported that adding mifepristone to misoprostol might increase effectiveness and decrease side effects of medical evacuation of the uterus, but the evidence is controversial (2).

In the study by Tzur et al. (1), the treatment protocol was not randomized. Medically treated women were slightly younger (mean age 32.1 vs. 33.6 years) and the duration of pregnancy a bit shorter. Other characteristics—parity, use of assisted reproductive technology and history with previous miscarriages—did not differ between the study groups. Even though the lack of randomization can be classified as a weakness, as miscarriage is a potentially stressful life event, psychological aspects need to be considered. The patients may appreciate that their opinion is heard while planning the treatment. Women and their partners must be properly informed about the alternatives. Individual planning of the treatment, taking into account a patient's characteristics, medical history, and opinions increase patient satisfaction.

In conclusion, the study findings by Tzur et al. (1) confirm the equality of medical and surgical treatment of early miscarriage, as short-term fertility outcomes do not differ between these protocols. Given the cost-effectiveness of medical treatment—and the possibility, even rare, of serious complications related to surgical management—it can be considered a first-line treatment. However, there is no reason to have the threshold for surgical management too high if the patient prefers that.

1. Tzur Y, Samueloff O, Raz Y, Bar-On S, Laskov I, Tzur T. Conception rates after medical versus surgical evacuation of early miscarriage. Fertility and sterility 2020; S0015-0282(20)30669-5.

2. Al Wattar BH, Murugesu N, Tobias A, Zamora J, Khan KS. Management of first-trimester miscarriage: A systematic review and network meta-analysis. Human Reproduction Update 2019;25(3):362–74.

3. Smith LFP, Ewings PD, Quinlan C. Incidence of pregnancy after expectant, medical, or surgical management of spontaneous first trimester miscarriage: Long term follow-up of miscarriage treatment (MIST) randomised controlled trial. BMJ (Online) 2009;339:b3827.

4. Zhang J, Gilles JM, Barnhart K, Creinin MD, Westhoff C, Frederick MM. A comparison of medical management with misoprostol and surgical management for early pregnancy failure. New England Journal of Medicine 2005;353:761–9.

5. Niinimäki M, Jouppila P, Martikainen H, Talvensaari-Mattila A. A randomized study comparing efficacy and patient satisfaction in medical or surgical treatment of miscarriage. Fertility and Sterility 2006;86(2):367–72.