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Intrauterine contraception after medical abortion: factors affecting success of early insertion☆,☆☆,★

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Abstract

Objective: To assess the success and factors affecting early intrauterine device (IUD) provision after first trimester medical termination of pregnancy (MTOP).

Study design: Subgroup analysis of a randomized contraceptive trial assessing the long-term effects of early provision of intrauterine contraception following abortion. Altogether, 606 women undergoing MTOP were included and followed for 3 months. The intervention group (n=307) was offered an IUD (either the levonorgestrel-releasing intrauterine system or copper-IUD) at a follow-up visit 1–4 weeks after MTOP. The control group (n=299) contacted primary health care for follow-up and contraceptive provision. Adverse events (infections, bleeding, residual tissue and incomplete abortion) were analyzed on intention-to-treat basis and IUD expulsions on per-protocol (PP) basis.

Results: In the intervention group, 234 women (76.2%) received the IUD as scheduled, 46 later (altogether 91.2%). In the control group, the corresponding figures were 8 (2.7%) and 64 [altogether 24.1%, Odds ratio (OR) (95% Confidence interval (CI)) = 32.7 (20.3–52.6)]. Eighty-five (27.7%) women in the intervention group and 38 (12.7%) in the control group received treatment (administration of antibiotics, misoprostol or surgical evacuation) because of presumed adverse event [2.63 (1.72–4.01)], mainly residual tissue. In the control group, 23 (60.5%) of these occurred during the first 2 weeks. IUD expulsion occurred in 12 (5.4%) of the 222 women in the intervention group (PP basis).

Conclusions: When provided as part of abortion service, most early insertions following MTOP were performed as planned. The main reason for postponement was overdiagnosis of adverse events suspected at follow-up. The rate of IUD expulsion was similar to that reported previously.

Implications: Early insertion following MTOP is safe, and the rate of IUD expulsion is low. Most adverse events possibly delaying IUD insertion occur early. Based on timing of adverse events in the control group, IUD insertion at approximately 2 weeks after completed MTOP seems optimal.

Keywords: Medical abortion; Complication; Adverse event; Intrauterine contraception; IUD expulsion

1. Introduction

Several cohort studies have shown that postabortion use of long-acting reversible methods of contraception, and especially that of intrauterine contraceptive devices (IUDs), is associated with reduced incidence of recurrent unintended pregnancy [1–4].

According to international guidelines, an IUD can be safely inserted at the time of surgical termination of pregnancy (TOP) or after medical termination of pregnancy (MTOP) when, with reasonable certainty, the woman is no longer pregnant [5–7]. Immediate insertion of an IUD at the time of surgical TOP leads to a higher overall rate of use compared with delayed insertion [8,9]. This is explained in part by the high percentage of women not attending the scheduled follow-up visit [4,10].

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During the last few decades, MTOP has become the dominant method of early abortion in several countries. In 2014, 95% of all induced abortions were medical in Finland, and the figure was 51% in England and Wales [11,12]. In 2015, the figures were 91% in Sweden, 88% in Norway and 81% in Scotland [13–15]. In the US, the corresponding figure in 2011 was 23% [16]. MTOP is associated with a rate of up to 20% of early adverse events, some of which may interfere with the initiation of intrauterine contraception [17], although in several studies, early IUD insertion between 1 to 4 weeks following MTOP has proven to be safe and effective [1,18–20]. However, the overall success of IUD provision following MTOP and the factors affecting it have not been assessed in large-scale trials.

We have undertaken a randomized controlled clinical trial (RCT) evaluating the long-term effects of routine provision of IUD [either the levonorgestrel-releasing intrauterine system (LNG-IUS) or a copper IUD (Cu-IUD)] in association with first-trimester TOP versus the practice of initiating oral contraceptives at the time of TOP with the plan of later provision of IUD [21]. We found that the incidence of recurrent unintended pregnancy was significantly reduced among women randomized to early IUD provision (intervention group) already during the first year after the index abortion [21].

The present work is a subgroup analysis of the above-mentioned RCT. We assessed the success of early (i.e., between 1 and 4 weeks) initiation of intrauterine contraception following first-trimester MTOP and the factors that may interfere with it. Second, we analyzed all adverse events and complications — those related to MTOP itself (infection, heavy bleeding and incomplete abortion) and their timing and those related to IUD insertion (infection, expulsion, unscheduled visits) within 3 months after MTOP.

2. Materials and methods

2.1. Study population

This study was performed in collaboration with Helsinki University Hospital and the City of Helsinki. The inclusion criteria were residence in Helsinki, age ≥18 years, first-trimester pregnancy with desire to terminate it, acceptance of intrauterine contraception and willingness to participate and to sign the informed consent form. The exclusion criteria were contraindications to intrauterine contraception, such as uterine anomaly, acute genital infection or cytological findings in Pap tests requiring further investigation.

The study protocol has been described in detail previously [21]. In brief, in the primary study, 751 women were randomized into two groups to assess the effects of intrauterine contraception initiated in association with TOP [either medical (n=606) or surgical (n=142)] on the need of subsequent TOP. Three women decided to continue with the pregnancy after randomization.

Following MTOP, the intervention group received an IUD at a follow-up visit including clinical and ultrasonographic examination at 1–4 weeks after MTOP. A follow-up visit was scheduled at 3 months after TOP to ensure acceptance of the method and correct location of the IUD by visualizing the strings. If the strings were not detected or appeared to be too long, vaginal ultrasonography was arranged.

Women in the control group received oral contraceptives for immediate postabortion contraception. They were advised to schedule a follow-up visit at 2–4 weeks to verify the outcome of TOP (serum hCG measurement) and for further contraceptive provision (including IUD insertion) at the primary healthcare services of the City of Helsinki. The IUD insertions occurring within 3 months after the abortion were verified using the electronic patient files of the City of Helsinki.

All procedures, including follow-up of the control group, were performed according to Finnish guidelines on induced abortion [22]. All women were screened for *Chlamydia trachomatis* infection prior to TOP.

All study participants were advised to contact the study hospital in cases of diagnosed or suspected TOP-related complications. The follow-up visits including the planned IUD insertions were performed by the study physicians. Women with unscheduled hospital visits were mainly examined by physicians on duty. The study hospital is in charge of the abortion care and emergency gynecological services in the Helsinki metropolitan area. In addition, the electronic database of the hospital is comprehensive and covers all medical specialties.

All additional visits to the hospital within 3 months after TOP were evaluated and analyzed. Unsuccessful MTOP was defined as continuing pregnancy with a living fetus. Cases of missed abortion or suspected residual tissue were analyzed according to the type of treatment provided (surgical evacuation, administration of misoprostol or expectant management). Clinically diagnosed genital infections were defined by purulent discharge and/or uterine tenderness with or without fever and classified into those treated with oral or intravenous antibiotics.

Complete IUD expulsion was defined as a totally expelled device and partial expulsion as IUD displacement of more than 15 mm from the uterine fundus in vaginal ultrasonography. A new device was offered in all cases of IUD expulsion.

2.2. Ethics approval

The study was approved by the Ethics Committee of the Hospital District of Helsinki and Uusimaa (HUS 260/13/03/03/2009), as well as the City of Helsinki (10–1138/054), and it was registered at www.clinicaltrials.gov (NCT01223521).

2.3. Statistical analysis

Adverse events and complications after MTOP and their timing were analyzed on an intention-to-treat (ITT) basis. Assessment of complications related to early provision of an IUD (up to 4 weeks) was performed on a per-protocol (PP) basis. Statistical analyses were performed using IBM SPSS statistics software Version 23.0 (IBM Corp., Armonk, NY, USA). The chi-square test was used to evaluate possible differences in the incidence of various complications