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КОНТРАЦЕПЦИЯ ПОСЛЕ ИСКУССТВЕННОГО АБОРТА

***Аннотация:** в статье представлен обзор современной литературы на тему контрацепции после искусственного аборта. Был проведен углубленный анализ рекомендаций ведущих международных и государственных организаций по использованию контрацептивов после искусственного аборта, проведенного как хирургическим путем, так и медикаментозным, во время 1 и 2 триместра беременности. Анализ передовых мед. практик проводится для оценки рисков и преимуществ применения современных послеабортных профилактических средств, использования наиболее подходящей контрацепции и, следовательно, для улучшения акушерско-гинекологической практики. Вся работа нацелена на сохранение женской репродуктивной способности, а также снижение послеабортных осложнений. Методы исследования: обзор научной литературы, находящейся в свободном доступе, за последние 10 лет.*

***Ключевые слова:** искусственный аборт, контрацепция, профилактика, беременность.*

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CONTRACEPTION AFTER INDUCED ABORTION

Abstract: *a review of the current literature on contraception in induced abortion. An in – depth analysis of the guidelines of leading international and national organizations for contraceptives after induced abortion-surgical and medicated during the I-st and II-nd trimester was conducted. An analysis of good practices is made in order to assess the risks and benefits of the application of modern means of prophylaxis after artificial abortion, the use of appropriate contraceptives and thus to improve the individual obstetric-gynecological practice. All activities are aimed at preserving women's reproductive ability and reducing post-abortion complications. Methods: review of available literature from the last 10 years.*

Keywords: *induced abortion, contraception, prophylactic, pregnancy.*

Results: the methods of long-acting reversible contraception are highly effective and safe and are the first-choice method of contraception. Women who chose to have a 2-fold lower abortion rate. Progestogen-only implant, and levonorgestrel-releasing intrauterine system, are the most effective methods. Intrauterine agents in surgical abortion are placed immediately after the procedure, in the case of medical abortion – between the 9th and 14th days after the reception of the Mifepristone after a confirmed completed abortion. Women with a postmenstrual have more normal bleeding patterns than those with a postmenstrual. With delayed contraception, 50.0% of women do not return for Intrauterine agents.

Conclusion: barrier methods are the least effective. The diaphragm and cervical stopper should not be used until 6 weeks after abortion in the second trimester. Women under the age of 21 have a 2 – fold higher risk of incorrect and inconsistent use of the chosen method of contraception. In Ha, sterilization can be performed immediately

after the procedure, and in MA – after 6 weeks, the bleeding should have stopped. The World Health Organization recommends that family planning methods begin after three menstrual cycles after an abortion.

1. Introduction.

Every woman should be informed that the next ovulation can occur at the earliest 2 weeks after the abortion, and in the absence of an effective method of contraception there is a risk of a subsequent pregnancy. After abortion in the first trimester, ovulation occurs within 1 month in 85.0 – 90.0% of cases [2], [7]. After 13 g. w. 66.0% of women ovulate within 21 days. At the moment, the method of first choice for contraception after abortion is not combined oral contraceptives (COC), as previously believed, but Long-Acting Reversible Contraception (LARC) t. well. long-acting reversible contraception [2]. The main LARC methods are: injectable progestogen (DMPA); progestogen-only implant (IMP); copper intrauterine device (Cu-IUD, IUD); levonorgestrel-releasing intrauterine system (LNG-IUS).

A comparison of the success rate of different methods and the frequency of unwanted pregnancy depending on the method of use is presented in Table.1. The results of studies involving 7 486 women [3] who used tablets, patches or rings (CHC) showed that women under the age of 21 had twice the risk of unwanted pregnancy.

Table 1

Relative share of women with unwanted pregnancy in the first year
of using contraception with typical and perfect use

<i>Method</i>	<i>Unwanted pregnancy</i>	
	Typical use %	Perfect use %
No method	85.0	85.0
Methods based on fertility awareness	24.0	5.0
Female diaphragm	12.0	6.0
Male condom	18.0	2.0
Combined hormonal contraception (CHC)*	9.0	0.3
Progestogen-only tablets (POP)	9.0	0.3
Progestogen for injection (DMPA)	6.0	0.2
Copper Intrauterine (Cu-IUD)	0.8	0.6
Levonorgestrel intrauterine (LNG-IUS)	0.2	0.2
Progestogen implant (IMP)	0.1	0.1

Female sterilization	0.5	0.5
Vasectomy	0.1	0.1

(modified Trussell et al.).

– «typical» – includes both improper and inconsistent use;

– «perfect» – includes correct and consistent use.

*CHC – Combined oral contraception, transdermal patch, vaginal rings.

LARC – Long-acting reversible contraception – highlighted in dark font

LARC are highly effective and safe throughout reproductive life. Compared to short – acting methods (vaginal ring – 1 month; combined Skin Patch-1 week), long-acting methods have a higher rate of use of the method and a lower rate of pregnancy after abortion [6, 13]. In a study conducted in St. Louis (USA) involving 9,256 patients, it was found that in the cohort of women who chose the LARC, the abortion rate decreased by more than 2 times compared to the regional and national average rates among women of all ages, and among adolescents, the abortion rate decreased from 34.3 to 6.3 per 1,000 women of the same age ($p < 0.001$). The use of long-acting methods was more common after surgical abortion than after medicated abortion [7].

The world's leading experts recommend that the use of contraception should begin immediately after an abortion. With delayed contraception, 50.0% of women do not return for a uterine spiral or contraceptive implant [7]. A systematic review and meta-analysis of randomized controlled trials showed significantly higher levels of patient satisfaction with immediate implant and injectable preparations compared to delayed insertion [7]. A major systematic review of 2017. and a meta-analysis looking at risk factors for re-pregnancy among teens, which included 26 studies reporting on more than 160,000 pregnancies in adolescents, found that the use of Apostille has a significant protective effect.

2. Results and discussion.

Methods of contraception: Cu-IUD, LNG-IUD.

Intrauterine contraception-ubiquitously-intravenously, intravenously-repeatable: the licensed duration of use of intravenously varies from 3 to 10 years [1, 5]. After surgical abortion, the uterine spiral is placed immediately after completion of the procedure. Many

studies [3, 11, 14] and a 2014 meta-analysis., including 12 studies, and 7,119 women, summarizes that placing the Apostille after Ha is safe and practical [3, 6]. The review found no differences in undesirable complications, such as upper genital tract infection or perforation, between immediate and delayed insertion (Apostille 1.0), [5].

The analysis showed a three-fold increase in the risk of pregnancy in the delayed-placement group (RR 2.70) [7]. On the other hand, it was found that the expulsion of the uterine spiral in II-nd trimester during the extravehicular after the surgical abortion was more frequent than during the I-st trimester [4, 5]. There have been studies that have compared the bleeding pattern with the use of aposematic Cu-IUS (37 women) or LNG-IUS (34 women) immediately after surgical abortion [3]. After 6 months of follow-up, it was found that LNG-IUS consumers had a higher incidence of amenorrhea (LNG – 11.7%/ Cu – 0.0%), an increased number of days with spotting (LNG – 14.7%/ Cu – 0.0%), as well as severe bleeding (LNG – 14.7%/ Cu – 5.4%). A higher proportion with a normal bleeding pattern had the women with aposematic- Cu-IUS: (LNG – 55.9% / Cu – 94.0%).

For medicated abortion, the uterine spiral IUD should be placed on the day of the checkup (between the 9th and 14th day after the administration of the Mifepristone). An earlier placement of the uterine spiral is possible- e.g. between the 4th and 9th days, but only on the condition that a completed abortion with serum beta [2] uterine spiral s placed within 5–10 days of successful medicated abortion have low expulsion rates, high continuation rates [7], and lower pregnancy rates compared to delayed insertion. A study [3] that compared randomized women with either early (5–9 days after Mifepristone) or delayed (3–4 weeks after Mifepristone) placement aposematic did not report any difference in bleeding patterns between the two groups. The women with the put LNG-IUS have a higher incidence of amenorrhea compared to Cu-IUS The Navy in 12 years. as in young women under 20 years of age, it is determined by WHO to have a higher risk of expulsion [12]. uterine spiral did not increase the risk of infertility in young women, and women's fertility returned to baseline levels quickly after the deletion of uterine spiral [7].

Contraceptive containing progestogen only, (POC): (tablets, POP; solution for injection for i. m. or s. c., DMPA at 12 gw; implant for 3 years).

DMPA: a study of 132 women using DMPA immediately after surgical abortion, reported no serious complications, but reported low follow-up rates (22.0%) at one year of follow-up and high rates of Re-pregnancy [7]. Medicated abortion dosing can be initiated during the administration of either Mifepristone or Misoprostol [14–15]. DMPA applied on the day of Mifepristone, may increase the risk of continuing the pregnancy, but does not increase the risk of having to surgically complete the abortion [5–7]. In a Mexico-U.S. study [3] involving 461 women undergoing Medical abortion (up to 75 days of pregnancy), women were randomized to receive intravenously intramuscular during the administration of Mifepristone (fast start group, n = 220) or after abortion (delayed placement group, n = 226), there was no difference in the need for surgery between the groups. The incidence of continued pregnancy was higher in the early onset Group (8/220,3.9%) compared to the delayed onset Group (2/226,0.9%). It is recommended that women be advised, the application of DMPA (IM or SC) should be carried out at the same time as the intake of Mifepristone. Retrospective cohort studies found no differences in medical abortion success rates (early 6.4% and delayed 5.3%). However, prolongation of pregnancy as a cause of Medical abortion failure in the DMPA injection group was significantly higher at delayed insertion (early 0.9%, delayed 3.6% [7].

Etonogestrel and levonorgestrel: (IMP).

There are theoretical concerns that initiation of progestogen-only contraception at the same time as the administration of the Mifepristone (progesterone receptor modulator) may reduce the efficacy of medical abortion due to competition in the progesterone receptor. The results of a study [3] from Mexico and the U.S. that included 476 women subjected to medicated abortion (9 weeks), randomized to receive intravenously either with the intake of Mifepristone (Quick Start Group, n = 236) or after the completion of the abortion (post-start group, n = 240), did not show any differences in the success of medical abortion. The study found that 3.9% for the early-onset Group and 3.8% for the post-abortion group had surgical termination. The average number of

bleeding days was marginally higher in the early onset group than in the post-abortion group (12/10 days).

The frequency of severe bleeding was identical in both groups. Two randomized trials were conducted in women undergoing medical abortion before 13 gw [3, 7] have shown that the success rate of abortions is the same in both groups. An additional randomized controlled trial [3] from Sweden and the United Kingdom involving 538 women subjected to medical abortion (9 weeks), randomized to place IMP 1 hour after Mifepristone (immediate Group, $n = 277$) or follow-up 2–3 weeks later (delayed group, $n = 261$) found no significant difference in the efficacy of medical abortion in the groups (early 94.2% vs. delayed 96.0%). However, the proportion of women with an IMP was significantly higher in the early placement group (98.9% intra uterine IMP) compared to the delayed placement group (71.6% IMP) ($p < 0.001$). In addition, the study reported significantly fewer unwanted pregnancies at 6 months in the immediate group compared to the delayed placement group (early 0.8% vs. delayed 3.8%, $p = 0.018$).

Women should be advised that the uterine spiral should be placed during administration of the Mifepristone which achieves effectiveness and less risk of unwanted pregnancies.

Given the link between progestogen-only contraceptive methods and amenorrhea, there is a risk that women with unsuccessful medical abortion (continuing pregnancy) mistakenly attribute the lack of bleeding after the medical abortion (MA) procedure to the fact that they are using contraception. Therefore, it is reasonable for any amenorrhea to be reported in a timely manner, so that a clinical examination and appropriate tests can diagnose the ongoing pregnancy in time!

Combined hormonal contraception (Apostille) – oral, combined hormonal contraception (CHC); transdermal patches; vaginal rings.

A systematic review [3] that included seven studies and 1,739 women reported that immediate use of COC did not affect the success rate of the abortion procedure and the incidence of complications before 13 g. w. [7]. In addition, women who used CHC immediately – showed bleeding patterns similar to women not using contraception and had less bleeding compared to those using copper Helix. The use of combined

oral contraceptives can begin the next day after Misoprostol. Early use of a combined transdermal patch after abortion is safe [3]. A study of 298 women randomized to start immediately after an abortion, or with a delayed onset – a week after the abortion, showed no difference in the rates of continuation of pregnancy, but 53.0% of women, six months after the abortion, discontinued the contraceptive patch [9].

Early use of a vaginal ring after abortion is safe [3]. A cohort study of 81 women who had a vaginal ring inserted one week after surgical or medical abortion 13 g. w. no serious adverse reactions events or infections have been shown [7].

Barrier methods – vaginal diaphragm, condom:

Diaphragms are considered unsuitable up to 6 weeks after abortion in the second trimester, since the required size of the diaphragm can overflow change, because the uterus returns to normal size. Barrier methods are considered the least effective law-traception [3]. In situations where the use of estrogens is undesirable for a woman or contraindicated, progestin contraception or long-acting progestin contraceptives may be recommended [1, 4, 8].

Methods of fertility awareness (FAM): women after abortion can begin to use calendar methods (unprotected intercourse in the days of the cycle 8–19) if after the abortion they have had at least one menstruation, and symptomatic methods (Ovulation Method with cervical mucus assessment and temperature measurement) – after three menstruation [10]. Because it relies on detecting the signs and symptoms of fertility and ovulation, making it difficult to use them.

Female sterilization:

If sterilization is requested, ideally this should be done only sometime after an uncomplicated abortion. Individuals who want to perform tubal occlusion during abortion should be warned about the possible increased failure rate and the risk of regret. Special attention should be paid when women request sterilisation to ensure that their choice is not unduly influenced by the emotion of the moment [12]. There are studies that report an increased regret rate with sterilization that takes place simultaneously with abortion [3]. In surgical abortion, sterilization can be performed immediately after

the surgical procedure. The recommended period for sterilization after Medical abortion is 6 weeks and the bleeding should have stopped.

Emergency contraception:

Emergency contraception provides women of all reproductive ages with a means to prevent unwanted pregnancy after each unprotected sexual act – UPSI. Emergency contraception includes: uterine spiral with cuprum (Cu-IUD) and oral emergency contraception. Spiral with cuprum (Cu-IUD) is the most effective form of emergency contraception for unprotected intercourse (aposematic) within 120 hours or within 5 days of expected ovulation (day 19 in a regular 28-day cycle) [3]. Two preparations for oral emergency contraception are available: Ulipristal acetate (UPA), Ulipristal is a progesterone receptor modulator, which is a synthetic steroid derived from 19-norprogesterone and is authorized for use within 120 hours after unprotected intercourse (UPSI). Oral progestogen containing LNG 1.5mg, levonorgestrel is authorised for administration up to 72 hours after unprotected intercourse (UPSI) [9].

Recommendations.

1. Women who have opted LARC have a 2-fold lower abortion rate compared to the regional and national average rates among women of all ages. Patients' satisfaction with immediate administration of implants and injectable preparations is higher compared to delayed for later insertion. Young women under 21 have a 2-fold higher risk of incorrect or inconsistent use of the chosen method of contraception.

2. The uterine spiral is placed immediately after the procedure. There was no difference in complications between immediate and delayed uterine spiral placement. Expulsion of the uterine spiral during the II-nd trimester is more common than during the I-st trimester. Women with Cu-IUS have more normal bleeding patterns than those with aposematic. Women with LNG-IUS have a higher incidence of amenorrhea, an increased number of days with spotting and bleeding.

3. Post-MA uterine spiral is placed between the 9th and 14th days after the reception of the Mifepristone, provided that a completed abortion has been confirmed. There was no difference in adverse reactions between early and delayed administration of uterine spiral. Women's with LNG-IUS have a higher incidence of amenorrhea compared to Cu-IUS.

4. In MA, the use of DMPA (IM or SC) and IMP should be carried out simultaneously with the intake of Mifepristone, despite the absence of a difference in efficacy and side effects between early and delayed for subsequent use of DMPA and IMP. DMPA and IMP applied on the day of urgencies did not affect the frequency of ongoing pregnancy.

5. Immediate use of a combined oral contraceptives, a combined transdermal patch or a combined vaginal ring does not affect the success rate of the abortion procedure. There was no difference in effectiveness and adverse reactions between early and delayed administration of combined hormonal agents.

6. Barrier methods are the least effective contraceptive methods. The diaphragm and cervical stopper should not be used until 6 weeks after second trimester abortion.

7. Because it relies on detecting the signs and symptoms of fertility and ovulation, its use can be difficult after abortion.

8. If sterilization is requested, ideally this should be done only after some time after an uncomplicated abortion. In surgical abortion, sterilization can be performed immediately after the surgical procedure. The recommended period for sterilization after MA is 6 weeks and the bleeding should have stopped.

9. Hormonal injections, implants, combined hormonal contraception (tablets, patches and rings) and progestin-only tablets as well as uterine spiral up to 13 g. w. are defined by WHO as the first category of contraceptives (safe to use, WHO, 2015) so early initiation of administration is recommended.

10. Women at high risk of HIV infection are allowed to use all hormonal contraceptive methods incl. Cu-IUD and LNG-IUD without restrictions

3. *Conclusions.*

Timely application of various methods of prevention of pregnancy after surgical or medical abortion, reduces the risk of subsequent complications, preservation and restoration of reproductive functions. It is important to conduct psychoprophylaxis, clarifying conversations and prophylactic examinations for both women and their partners. The final choice of contraceptive method should be made by the woman herself. No additional contraceptive measures are necessary if contraception begins immediately or within 5 days after the abortion.

The methods of the LARC are highly effective and safe throughout the reproductive life. They are the first choice of contraception. The methods are the most effective if they are applied early relative to the time of the abortion. With delayed contraception, 50.0% of women do not return for uterine spiral or contraceptive implant.

The World Health Organization recommends that family planning methods can begin after three menstrual cycles after an abortion.

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