

---

## SPECIFIC CHARACTERISTICS OF MEDICATED ABORTION – REVIEW

**Zhivko Zhekov**

Department of Obstetrics and Gynecology, Medical University of Varna, Varna, Bulgaria,  
[zhivko61@abv.bg](mailto:zhivko61@abv.bg)

**Abstract:** Specific characteristics of medicated abortion include the use of medication to terminate a pregnancy. It typically involves taking two medications, mifepristone and misoprostol, in order to induce a miscarriage-like process. This method can be used up to 10 weeks into a pregnancy and is considered safe and effective. An analysis of various randomized controlled trials has been performed to evaluate approaches to making decisions about surgical or medicamentous abortion, which are extremely difficult for our conditions. The main factor besides the medical condition is the regulation .

**Purpose:** Open research studies and presented articles used as models and frameworks for tracking abortion practices when considering medically related situations, and approaches to clinical medical practice. Most studies deal with the Performing of abortions on demand, a small minority consider the practice of performing abortions on medical grounds.

**Results:** Monitoring of the conditions for performing an abortion on request or for medical reasons is carried out by the conditions stipulated in several medical documents - Medical standard in Obstetrics and Gynecology, The Ordinance on performing an abortion. Regardless of the place of performance, information about performed abortions requires strict accountability and compliance with protocols in Bulgaria. Medical abortion has been a means of choice in different parts of the world for over 20 years, but only in the last few years has it started to be applied in medical institutions in Bulgaria, according to strict indications. Medications are administered according to schedule: Mifepristone (200 mg oral, 24- 48hours before the procedure); Misoprostol (400 mg sublingual, 1-2 hours before the procedure or vaginal/ buccal, 2-3hours before the procedure).

In conclusion, Abortion is strictly regulated in Bulgaria. regulatory requirements, conditions and the possibility of performing abortion in the healing structure are observed. In addition, a pregnant woman may perform an abortion on medical grounds under proven conditions and conducted confirmatory tests for the presence of a medical cause.

**Keywords:** abortion on medical grounds, medical reason, knowledge, schedule of drugs, regulatory requirements

### 1. INTRODUCTION

Abortion is a manipulation to terminate a pregnancy, whether surgical or medical. This is a method of termination of pregnancy for women who can not for medical reasons or prefer not to carry their pregnancy.

Abortion on request can be performed up to 13 gestal week. Abortion on medical grounds can be performed up to 22 gestal week. Termination of pregnancy is a personal decision. Any woman considering abortion should be aware of the risks of any method of terminating pregnancy, as well as the alternatives including the birth of a child and parenthood.

If there is no clear conviction, an interview with relatives, medical specialists, a social worker is required to carry out an abortion. Specific tests are required if necessary. [12].

If the pregnant woman is under 18, the legislation in Bulgaria requires the consent of one parent to carry out the manipulation.

The use of medication for abortion is becoming more widespread. Worldwide, medicamentous abortion is the main remedy for unwanted pregnancy. Suitable for the procedure are women who are pregnant up to 7 gestal week, who wish to terminate pregnancy on medical indications (hollow egg, delayed abortion) or at will [4].

In Bulgaria, medicines registered by the executive agency for medicines, shown only for such application, are used to carry out the procedure.

Surgical abortion is suitable for both earlier pregnancies and older than 8-9 gestal week. The procedure is performed under anesthesia, usually general. It is performed in a medical structure (Medical Center or hospital structure [8,9] [10,11].

**Purpose:** a review of the scientific information on the risks and benefits of the application of modern means of prophylaxis in artificial abortion, which will improve the individual obstetric and gynecological practice, based on good clinical experience and scientific knowledge. Define the conditions for performing an abortion for medical reasons. The procedure is different from elective abortion and requires strict administration.

## 2. THE MATERIAL AND METHODS

The material and methods used the legal framework governing abortion in Bulgaria has been used and the established practices in the world regarding the conditions for abortion have been studied.

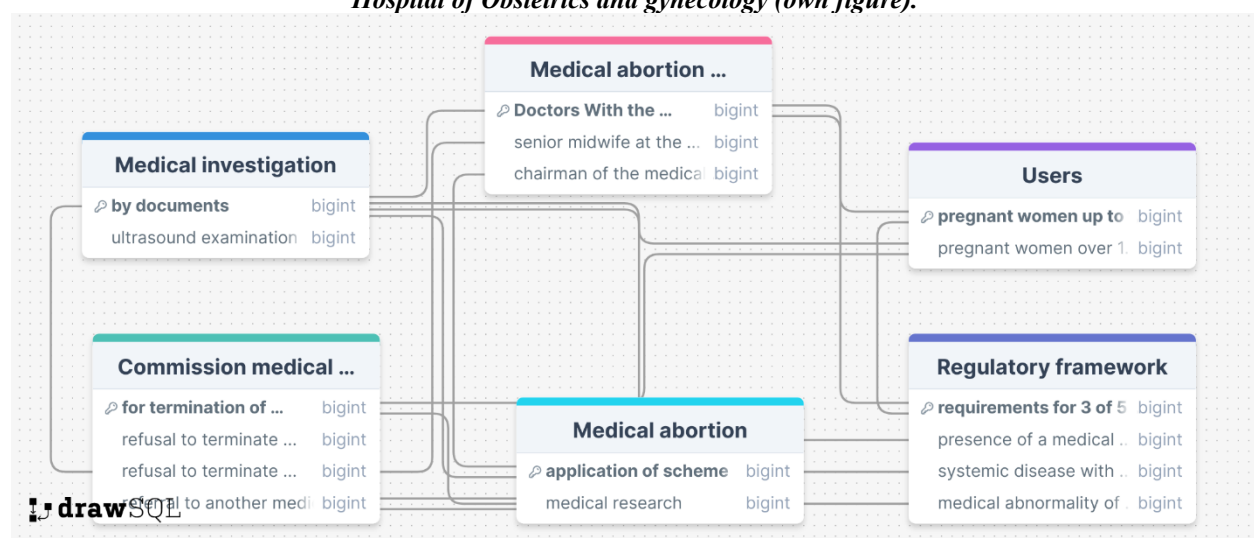
## 3. RESULTS

### *Abortion on medical grounds*

#### *Commission medical framework*

- The necessary conditions for the activity of the commission are - structure of the third level of competence Division, concluded contracts with other medical structures for advisory assistanceregulatory requirements for structure.
- A detailed application to the hospital Commission with all original documents attached (Figure 1.).
- Requirements for qualification of healthcare professionals, documentation requirements for assessment by consumers (at least 3 out of 5 diagnostic methods of fetal examination, clinical studies of the mother, other consultations in relation to the underlying or accompanying disease).

**Figure 1. Relational scheme of the activities of the commission on abortion on medical testimony of Specialized Hospital of Obstetrics and gynecology (own figure).**



Source: Own figure, author Zhivko Zhekov

### *Medical behavior*

The prescribed schedule of misoprostol in the gynecology department of pregnant women with a positive opinion of the commission is: 1st tablet of 400 mg Misoprostol per vagine, second and third tablets in 3 hours sub bucal, the maximum dose is 5 tablets in 24 hours or 2000microgram Misoprostol (own application scheme).

### *Abortion on demand*

Basic requirements-pregnancy up to 12 weeks gestation, ultrasound examination and signed informed consent for termination of pregnancy. All abortions are performed in accordance with the law in a hospital setting.

### *Surgical abortion*

It requires preparation of the patient in the hospital ward, tests , ultrasound monitoring, cervical screening. Performed with incomplete medical abortion or delayed abortion in the uterine cavity.

### *Medical training and skills*

The procedure is performed under anesthesia, usually general. First, the external genital organs and the vagina are disinfected. A dilation of the cervix is made, then with a vaccum or curette, the fetal sac is removed from the cavity of the uterus (curettage, abrasion, D&C). The expected side effects are vaginal bleeding (usually weak and short), abdominal pain. Benefits - faster termination of pregnancy and hence anxiety. Less blood loss Disadvantages - surgical intervention POS anesthesia, risk of infection, perforation of the uterus-

Before performing surgical abortion, dilation of the cervical canal is required. It begins with dilation of the cervix by inserting into the cervical canal thin cylindrical instruments, their size gradually increasing until the necessary dilation is reached with Hegar medical dilator (tab.1), then „scraped“ the tissue covering the uterus from the inside (mucosa, endometrium).

**Table 1. Heger dilation scheme depending on the period of pregnancy**

Pregnancy in gestational weeks	Dilation in millimeters	Heger dilator
6	≤ 6	4-5
7	7 - 8	5-6
8	8 - 9	6-7
9	9 - 10	7-8
10	10 - 11	8-9
11	11 - 12	10
12	12	11

Source: Adapted by Vico J., J. Pantoja, E. Martins, A. Weichselbaum [15].

#### 4. DISCUSSION

Successful dilation depends on the skills and technique of performing the intervention and the reason why it is performed [2]. The dynamics of dilation depends on the condition of the cervix, the susceptibility of the cervical opening and the duration of pregnancy. Dilation is performed under anesthesia with solid mechanical dilators (Hegar, Hawkin/ Ambler, Pratt or Denniston), a Foley urinary catheter (size 14, 25 mm bladder behind the inner opening of the neck) or osmotic dilators (*Laminaria japonica et digitata*, Lamicel, Dilapan-S) [2,3]. In the presence of non-genital cause for one-act dilation or pure surgical abortion, it is recommended to use osmotic dilators for a period up to 12- 24 hours before abortion [17]. The correct technique requires penetration into the internal opening, while the other remains in the upper part of the vagina and waits for the result [14]. The duration of dilation and the maximum use of dilapan with or balloon are parameters that require strict monitoring of the general condition, local monitoring, measurement and control [5]. This requires appropriate conditions, appropriate tools that allow for full control of the process of cervical dilation and do not increase the risk of infections [5,18].

The procedure is painful and the pain that women experience can lead to shock [11]. Therefore, the procedure is carried out under anesthesia, carefully. Technique and skills are required, depending on anatomical features, it is desirable to carry out under ultrasonic control [5]. To improve the condition and faster effect, nonsteroidal anti-inflammatory drugs are used [19]. Mental preparation is important for the success of the procedure, because sometimes strong anxiety and nervousness are not a good basis for carrying out the procedure [10,11].

Of course, there are complications with the use of osmotic dilators, which are rare. Cases of vasovagal reactions, bleeding, inadequate cervical dilation, cervical rupture and extreme uterine rupture have been described [2,17]. allergic reactions or anaphylaxis have been described with the use of algae [7,9]. No reduction in blood loss during abortion was observed with a prostaglandins and osmotic dilators. therefore, their use requires extreme precision and practical experience [19].

When choosing a medical abortion, a therapeutic regimen is applied after thoroughly informing the patient about the possible risks. Used scheme is as follows Mifepristone (200 mg oral, 24- 48hours before the procedure); Misoprostol (400 mg sublingual, 1-2 hours before the procedure or vaginal/ buccal, 2-3hours before the procedure) [5, 17]. the use of osmotic dilators in combination with abortion drugs reduces the severity of pain, but does not shorten the time to achieve the required dilation [2,5].

Abortion in Bulgaria is regulated in a section of the ordinance of the Ministry of health with Ordinance 2 of 01.02.1990 on The terms and conditions for artificial termination of pregnancy [8,9].

The conditions for carrying out an abortion on request are up to 12 weeks gestation, after a declared signed informed consent, made examinations and conducted an ultrasound examination. It is carried out in a health center or hospital. It is performed under a short venous anesthesia, with dilation of the cervical canal and evacuation of the uterine contents [8,9]. Observation is for 2 hours after the procedure. It is supported by advice on recovery, hygiene and compliance with a regime for the Prevention of infections and complications [10,12].

Study of 2019 [5]. it found that vaginal medication administration and subsequent evacuation of uterine contents caused less bleeding than oral and sublingual ones, which also had more gastrointestinal side effects such as irritation and pain. When it is necessary to avoid the vaginal route due to infections or anomalies of the anatomical organs, alternatively, a more effective intake is recommended closest to the vaginal Route [6]. Single-use misoprostol is effective up to 18 weeks of pregnancy [15, 16]. In case of non-pre-dilation, due to the lack of readiness to dispose of the product after 18 weeks of gestation, a Parva C-section may be initiated in order to preserve reproductive functions and as a choice for a more gentle procedure. [4,5].

*Preparation of the cervix in SA*

Surgical abortion is a procedure performed to end an unwanted pregnancy. In order to perform surgical abortion, it is necessary to comply with certain conditions and there is a medical need. Here are some of the main conditions for performing a surgical abortion:

- confirmed pregnancy by clinical examination or ultrasound examination;
- surgical abortion can be offered in cases where the continuation of pregnancy poses a risk to the health of the woman or her testimony [5, 16];
- usually, surgical abortion can be used until a certain gestational age (for example, up to 12-14 weeks [7].), after which another method (such as medical abortion) may become preferred;
- tests - blood tests, bleeding and clotting time, and blood type with Rhesus factor;
- providing an objective assessment of the risks of possible complications.

It is important to provide proper instructions and information on the subject, as well as to consult a doctor about compliance with all the necessary rehabilitation measures after the operation.

It is necessary to prepare the cervix medicinally or with dilators, preferably in a medical institution because of the sudden complications that arise, especially in an earlier period of pregnancy [15].

Studies (18 RCT n=8,538) [16], comparing the administration of mifepristone to misoprostol, concluded that the time to complete the abortion was shorter for misoprostol, but in terms of the degree of dilation achieved before the abortion, the dilation was greater for mifepristone [14].

Despite its effectiveness, it is advisable to resort to surgical abortion only in extreme cases, since there is a risk to the reproductive health of the woman (especially for the one who has never given birth) [4].

Other consequences:

- trauma of the endometrium and uterus;
- inflammatory and Infectious Diseases;
- infertility;
- incomplete removal of fetal tissues;
- allergic reaction;
- cervical insufficiency;
- massive bleeding;
- complications of the cardiovascular system.

Modern guidelines stumble on preliminary preparation with medicinal preparations that spontaneously alone or in combination can cause uterine contractions and discharge of the fetus. It is also used as a preparation before a surgical abortion. Dosing of pharmacological agents for cervical dilation before vacuum aspiration is as follows:

- Mifepristone 200 mg oral, 24- 48 hours before the procedure [17] or
- Misoprostol 400 micrograms sublingual, 1-2 hours before the procedure or vaginal/ buccal, 2 - 3 hours before the procedure [17].

When using medication, the behavior is recommended-when placing the tablet vaginally-the woman should remain in a supine position for about 30 minutes. It is necessary to observe a bedding regime for adequate preparation of the cervix, which is a leading condition for the safe carrying out of dilation and reducing the risk of complications such as perforation of the uterus and rupture of the cervix [8, 16]. There are restrictions on the application of means of dilation, if the cervix is not sufficiently dilated during pregnancy. If adequate cervical dilation cannot be achieved within the time limit for dilation and evacuation of uterine contents, medical abortion can be initiated as an alternative. The use of misoprostol softens rather than dilates the cervix, and therefore when preparing for SA in the second trimester it is recommended to use it in combination with mifepristone and/ or an osmotic dilator [3, 15].

When using one of the drugs misoprostol or mifepristone alone after 12 weeks of pregnancy for mechanical dilators, there should be readiness for the use of mechanical dilators for severe abdominal cramps and pain (contractions). The effect between 16 and 18 weeks of pregnancy is also closely monitored in order to minimize the risk of uterine rupture due to increased pain and contractions. Self-use of misoprostol or mifepristone has been associated with more frequent side effects such as bleeding, cramps and fever and is not recommended [6, 12, 13]. The WHO guidelines are [17,19]:

- use of one drug in early pregnancy up to 8 weeks - Misoprostol (400 mg sublingual, 1-2 hours before the procedure or vaginal / buccal, 2-3 hours before the procedure) [18];
- using a regimen of administration only of drugs for dilation and evacuation of uterine contents - Mifepristone + Misoprostol (effect to 24–48 hours before the procedure) [19];
- using an osmotic dilator using a single drug Misoprostol or Mifepristone, for cervical dilation in the second trimester (19-24 weeks of pregnancy) [10];
- using an osmotic dilator using one or more medications (Misoprostol or Mifepristone) [1].

*Consequences*

A properly conducted medical abortion has no serious consequences for the woman. However, the procedure is stressful for the body and rehabilitation therapy is needed.

Bleeding after abortion can last up to 14-20 days. With deviations from the norm - an increase in bleeding or a bad smell is necessary an urgent consultation with a specialist doctor.

For rapid recovery of the hormonal background, hormonal contraceptives should be taken for three menstrual cycles. If after two to three weeks after the procedure there is pain in the abdomen, a high temperature and a secretion with an unpleasant smell appears, urgent examinations and consultation are carried out. This may indicate that the fetal egg has not been completely removed.

The cervix consists of 85.0% connective tissue and 15.0% muscle fibers. Connective tissue is represented by collagen fibers and the main substance – proteoglycan. therefore, it is important to prepare to reduce the risk of complications and rupture. Prostaglandins applied to the cervix increase the activity of the enzyme collagenase and thus induce collagen breakdown and increase tissue hydration [12]. These processes lead to softening, shortening and increasing the elasticity of the cervix and expansion of the cervical canal. Muscle fibers from the cervix relax under the action of prostaglandins-misoprostol and facilitate the expansion of the canal [5].

The changes that occur in the pregnant uterus resemble those that occur during inflammation and are accompanied by an additional release of prostaglandins [1, 4]. Therefore, after administration of medicinal preparations, the recovery of tissues and structures should be monitored.

## 5. CONCLUSIONS

Carrying out an abortion requires preparation of the woman, preemption of the cervix under anesthesia depending on the term of pregnancy. when using the osmotic dilator, which is placed at least 4 hours before the procedure, the period between insertion and the procedure should not exceed two days. rule and placement of one or two osmotic dilators, 12-24 hours before abortion, placed in the cervical canal for 4-12 hours.

In women during pregnancy up to 7 weeks of gestation, the same can be interrupted one-act. in pregnancy from 8 weeks of gestation, cervical preparation should be carried out whether with osmotic dilator or Heger dilator in non-births, and after 12 weeks of gestation is useful for all women with induced abortion, whether surgical or medicated. channel dilation can be performed mechanically and / or pharmacologically with drugs administered alone or in combination - misoprostol or mifepristone. Expansion is carried out to a size suitable for gestational age and parity.

When using the method of vacuum aspiration, it is justified to carry out the dilation at the choice of the operator with osmotic dilators, medications or mechanical dilators. When using medicated abortion, induction is carried out only with medications within 6 to 24 hours for up to 16 weeks of pregnancy or 48 hours for more advanced pregnancy up to 22 weeks of pregnancy. prior preparation and psychoprophylaxis of the patient is required.

## ACKNOWLEDGEMENTS

- a review of literature,
- the normative framework is clarified.

## REFERENCES

- Abramchenko V., Guseva N. (2005), Medicated abortion. *Publishing house „ELBI“*, ISBN 5-93979-135-2: pp.116.
- Arsenijevic S., G. Vukcevic-Globarevic, V. Volarevic, I. Macuzic, P. Todorovic, I. Tanaskovic, M. Mijailovic, S. Raicevic and B. Jeremic. (2012). Continuous controllable balloon dilation: A novel approach for cervix dilation. *BioMed Central Ltd. Trials 13*:pp.196. <http://www.trialsjournal.com/content/13/1/196>
- Borgatta L., Roncari D., Sonalkar S., Mark A., Hou M.Y., Finneseth M., Vragovic O. (2012). Mifepristone vs. osmotic dilator insertion for cervical preparation prior to surgical abortion at 14–16 weeks: a randomized trial. *Contraception*. 86 (5):pp.567-71.
- Dikke G. (2018). Medicamentous service abortion in outpatient practice. *G ASBOTAR-Media*, ISBN 978-5-9704-4430-6: pp.384;
- Ipas. (2021). Clinical Updates in Reproductive Health. N. Kapp (1<sup>st</sup> Ed.). *Chapel Hill, NC: Ipas*.
- Jha B, Jha A. (2019). Assessment of different routes of administration of misoprostol in first and second trimester abortions. *International Journal of Medical and Health Research Volume 5*; Issue 6, June: pp.166-169.
- Kapp N. (2019). Medical abortion in the late first trimester: a systematic review. *Contraception*. Volume № 99: pp.77–86.
- Ministry of Health. (2021). Medical standard for Obstetrics and gynecology, *Ordinance Apostille 9 of 27 april 2021, last Amendment and supplement of the state gazette*. Issue 63, 30 July 2021.
- Ministry of Health. (1990). *Ordinance 2 of 01.02.1990 on The terms and conditions for artificial termination of pregnancy, amended and supplemented in the state gazette*. Issue 89/31.10.2000.

- Radeva S. (2023). Psychological aspects of women's health care abortion on medical grounds. *Knowledge - International Journal*; 61(4): pp. 777–781.
- Radeva S. (2024). Prevention of Induced Abortion - Effect on Pain. Systematic Review of a Database. *International Journal of Multidisciplinary Research and Analysis*. 7(01): pp.155-158.
- Radeva S. (2024). Completed abortion, features. *Евразийский союз ученых. Серия: медицинские, биологические и химические науки*. Том 01 (114): pp.3-7. <https://www.doi.org/10.31618/ESU.2413-9335.2024.4.114.1966>
- Royal College of Obstetricians and Gynaecologists. (2022). Best practice in abortion care. *Published by the Royal College of Obstetricians and Gynaecologists*
- Strigakov A., Ignatko Y., Davidov V. (2020). Obstetrics. Textbook. *ASBOTAR media*.
- Vico J., J. Pantoja, E. Martins, A. Weichselbaum. (2018). Aqueduct-100, innovador dispositivo y un método para la dilatación cervical controlable. *Prog Obstet Ginecol*; 61(6):pp.551-555.
- World Health Organization. (2022). Abortion care guideline. ISBN 978-92-4-003948-3, *Published Creative Commons Attribution-Non Commercial-Share Alike licence (CC BY-NC-SA 3.0 IGO (electronic version) (405)*.
- World Health Organization. (1999). Therapeutic method evaluative changes. *Scientific Group report*, Geneva (Technical Report series: 871).
- World Health Organization. (2014). Library Cataloguing-in-Publication Data. Clinical practice handbook for safe abortion. *Scientific Group*, Geneva; ISBN 978 92 4 154871 7.
- World Health Organization. (2012). Safe Abortion: Technical and Policy Guidance for Health Systems. Second edition, *Scientific Group*, Geneva.