Very early
MEDICAL ABORTION

A PRACTICAL GUIDE FOR HEALTHCARE PROFESSIONALS

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Editorial

The introduction of medical abortion in clinical practice has had an enormous impact on abortion access and care globally. As access has expanded, women increasingly present for abortion earlier in pregnancy. Medical abortion in very early gestation, before it is possible to confirm pregnancy location on ultrasound, is often referred to as a Very Early Medical Abortion (VEMA).

In many settings, ultrasound examination remains routine in the pre-abortion consultation. When women seek abortion in very early gestation, before six weeks, it is often not possible to confirm the pregnancy location on ultrasound. Although this is an expected finding, it may lead abortion providers to delay abortion treatment because of concerns about an undiagnosed ectopic pregnancy or reduced efficacy of the abortion regimen. Instead of offering abortion, patients are sometimes asked to return for repeat ultrasound examination and serial serum hCG measurements.

We know that many women decide to have an abortion even before, or at the time, they find out that they are pregnant. In addition to the psychological impact of an unwanted pregnancy and distressing symptoms associated with early pregnancy such as nausea and fatigue, delaying abortion care can have several disadvantages. Abortion at later gestation is associated with increased bleeding and pain, and delayed care may also result in additional unnecessary healthcare visits and examinations. Offering abortion in very early gestation could potentially also serve as an opportunity to detect a possible ectopic pregnancy earlier, before the onset of symptoms or rupture. Evidence on the efficacy and safety of VEMA is growing, but guidelines in many countries are still lacking. As specific considerations are required to ensure safe provision of VEMA, this publication is therefore both timely and important.

This clinical guide, prepared by experienced researchers, will serve as a practical, hands-on resource for abortion providers on the provision of Very Early Medical Abortion.

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β-hCG	Beta-human chorionic gonadotropin
CRL	Crown-rump length
DA	Days of amenorrhea
EP	Ectopic pregnancy
FIAPAC	International Federation of Abortion and Contraception Professionals
FIGO	International Federation of Gynecology and Obstetrics
h	Hour
HAS	Haute Autorité de Santé
HCP	Healthcare professional
HSUP	High-sensitivity urine pregnancy
IgG	Immunoglobulin G
IU	International Unit
IUP	Intrauterine pregnancy
L	Liter
LMP	Last menstrual period
LSUP	Low-sensitivity urine pregnancy
MA	Medical abortion
MToP	Medical termination of pregnancy
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NSAIDs	Nonsteroidal anti-inflammatory drugs
PG	Prostaglandin
$PGF_2\alpha$	Prostaglandin F2 alpha
PUL	Pregnancy of unknown location
RCOG	Royal College of Obstetricians and Gynaecologists
RhD	Rhesus D
SmPC	Summary of Product Characteristics
TVS	Transvaginal sonography
VEMA	Very Early Medical Abortion
WA	Weeks of amenorrhea
WHO	World Health Organization

Introduction

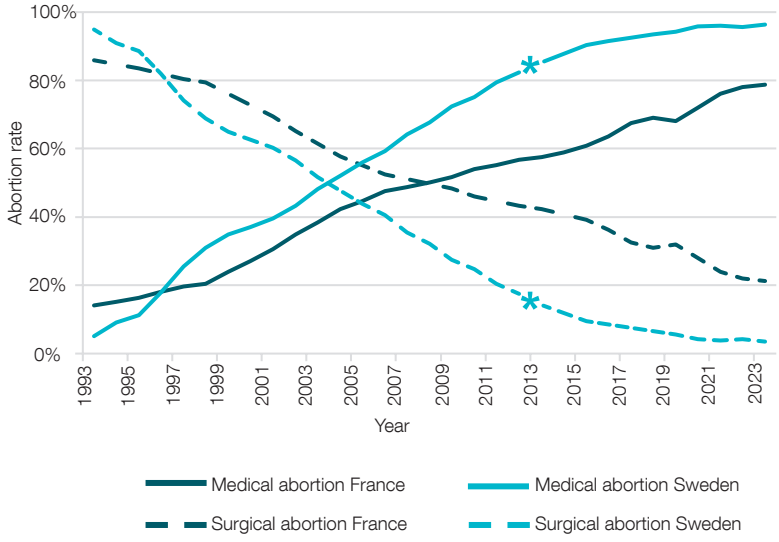
1. Trends in medical abortion practices

In the 1980s, significant advancements in medical abortion were made with the introduction of mifepristone, an antiprogestogen, and misoprostol, a prostaglandin analogue. Used sequentially—mifepristone followed by misoprostol—this two-drug regimen became a highly effective method for medical abortion. Since its first approval in 1988 in France, the use of mifepristone has expanded worldwide. As of May 2023, 96 countries have approved its use in this two-drug abortion regimen.[1]

In countries that have introduced medical abortion, there is a **growing trend towards increased use of medical over surgical methods,** though there are still huge differences between countries. For instance, in 2023, 79% of abortions in France and 96% in Sweden were medically induced (Figure 1).[2,3]

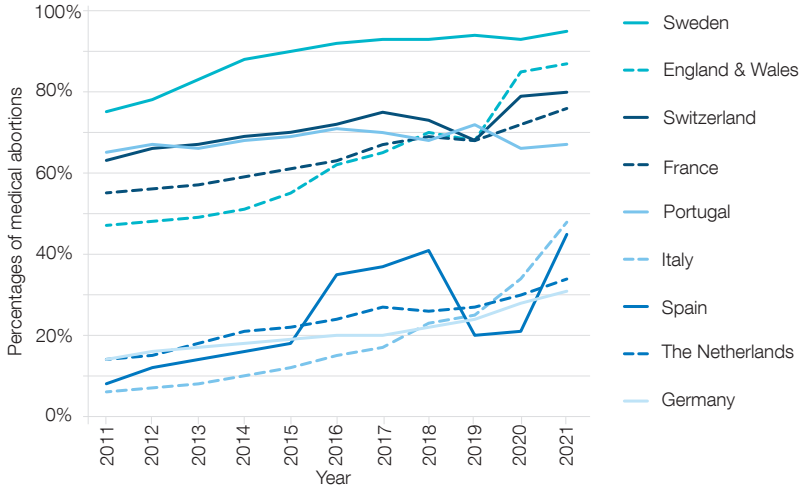
Figure 2 further highlights the rising trend of medical abortions across several European countries between 2011 and 2021.[4,5] This pattern reflects a broader shift towards medical abortion as a preferred method for terminating pregnancies throughout Europe.

Figure 1. **Percentage of abortions by procedure (medical or surgical), France and Sweden from 1993 to 2023.[6]**



**No data available for Sweden in 2013.*

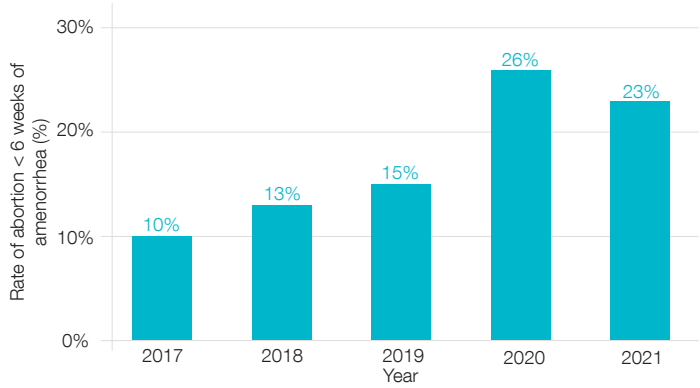
Figure 2. **Trends in the proportion of medical abortions among all first-trimester abortions in several European countries (data from 2011 to 2021).[4]**



In a similar fashion, **the proportion of abortions performed at a very early stage of pregnancy (before 6 weeks of amenorrhea) is generally increasing.** This shift towards abortions performed early in pregnancy is driven by the wish of most women to terminate an unwanted pregnancy as early as possible, along with improved pregnancy tests and access to safe abortion services.

As an example, in England and Wales, 10% of induced abortions occurred before 6 weeks of amenorrhea in 2017.[7] By 2021, this percentage had increased to 23% (Figure 3).[8]

Figure 3. **Rates of induced abortions performed below 6 weeks of amenorrhea (WA) – England and Wales from 2017-2021.[5]**



In Sweden, most abortions are carried out early in pregnancy, with 61% of abortions performed before 7 weeks of amenorrhea in 2023.[9]

TAKE-HOME MESSAGE

- The global use of medical abortion is increasing relative to surgical abortion.
- There is a rising trend in abortions being performed very early in pregnancy, before 6 weeks of amenorrhea.

2. Determination of pregnancy location before 6 weeks

Pre-abortion ultrasound scans to confirm gestational age, assess normal development, and to confirm the pregnancy location have become common practice and have contributed to a high standard of care. Consequently, they are endorsed by most national abortion guidelines for the determination of gestational age, including those of the World Health Organization (WHO),[10] although not universally.[11] For instance, neither UK nor Irish guidelines advise routine ultrasound for abortion before 12 weeks.[12]

The yolk sac is the first definite sign of an intrauterine pregnancy (IUP). In the very early stages of pregnancy, particularly **before 6 weeks of amenorrhea[a], identifying signs of an IUP (yolk sac or embryo) can be challenging. This has led to the concept of "very early abortion", which refers to the termination of an unwanted pregnancy before ultrasound can confirm the location or presence of an IUP,** such as when only an empty cavity or a sac-like structure without a yolk sac is seen. Medical abortion is particularly useful in these cases, as it leads to less pain and bleeding compared to an abortion in a later gestational age.[13] Furthermore, early abortion shortens the duration of pregnancy-related symptoms providing relief to women facing this situation. 'Very Early Medical Abortion' (VEMA) specifically refers to the use of medical abortion during these earliest stages of pregnancy before a yolk sac is visible on ultrasound.

TAKE-HOME MESSAGE

- In the very early stages of pregnancy (usually before 6 weeks of amenorrhea), ultrasound cannot reliably determine the location of the pregnancy, which has led to the concept of "very early abortion".

[a] Gestational age is typically calculated from the first day of the last menstrual period (LMP), which is assumed to be approximately 14 days before ovulation. It is expressed either in days of amenorrhea (DA) or weeks of amenorrhea (WA).

3. Very Early Medical Abortion (VEMA)

Several observational studies on VEMA have been performed worldwide, including the first one in Austria in 1999,[14] as well as in Scotland, Sweden, and the USA.[15] The largest of these, a retrospective cohort study involving 2,643 participants from Austria and Sweden published in 2017, demonstrated that medical abortion before 7 weeks of amenorrhea is highly effective and safe, regardless of whether the pregnancy location is confirmed by the visualization of an IUP on ultrasound.[16] This study also reported a lower rate of incomplete abortion when medical abortion was performed at an earlier gestational age.[16] The findings highlight not only the benefits to women of initiating medical abortion as early as possible but also support the use of VEMA in facilitating earlier diagnosis of ectopic pregnancies, thereby enabling timely treatment and reducing the risk of tubal rupture.

Since then, interest in VEMA among abortion providers has been growing worldwide, primarily due to an **increasing number of women seeking an abortion at a very early stage of their pregnancy.**

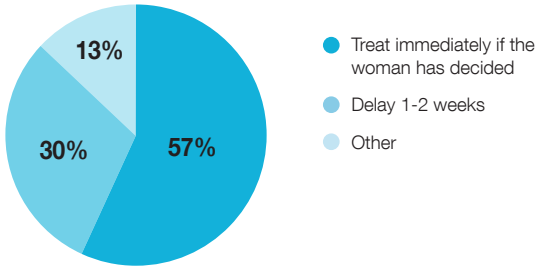
In a 2020 international survey involving 220 healthcare professionals (HCPs), nearly all respondents (93%, n = 205) reported encountering women seeking abortion at this early stage.[13] Furthermore, 61% of respondents (n = 135) noted an increase in such requests over the past few years (Table 1).

Table 1. **VEMA epidemiology (n = 220) (adapted from Fiala et al. 2020).[13]**

	Proportion of respondents working in settings where women request an abortion at a very early stage of their pregnancy		Proportion of respondents reporting increased demand over the last few years	
	N = 220	%	N = 220	%
TOTAL	**205**	**93**	**135**	**61**
Europe (n = 119)	107	90	64	54
North America (n = 68)	68	100	50	74
Australia & New Zealand (n = 25)	22	88	15	60
Others (n = 8)	8	100	6	75

Despite growing interest in VEMA, several barriers remain. The 2020 survey also found that a significant proportion of HCPs (30%) tend to delay medical abortion by one to two weeks, either until a specific gestational age is reached or until the location of the IUP is confirmed via ultrasound (Figure 4).[13] These delays are often **due to concerns about the potential risk of missing an ectopic pregnancy (EP).**

Figure 4. **Management of women's requests for abortion in very early pregnancies of unknown location (n=220 HCPs).[13]**



Other barriers to VEMA identified include:

- Lack of randomized controlled trials and clinical guidelines
- Difficulty in changing established practices
- Limited training and knowledge about medical abortion with pregnancy of unknown location
- Peer pressure
- Fear of lower efficacy
- Fear of medico-legal consequences, if the diagnosis of ectopic pregnancy is missed

TAKE-HOME MESSAGE

- A higher proportion of women seeking abortions are presenting at very early stages of pregnancy.
- Although the use of VEMA is increasing, many HCPs still face barriers that prevent them from meeting women's requests for early treatment.

4. Rationale for a practical guide

Today, with the abundance of easily accessible information, women are better informed about their pregnancies and the available options for safe abortion, including VEMA. Women have become more autonomous in making healthcare decisions, particularly regarding their sexuality and pregnancy. Pregnancy tests have not only become more accessible but also highly sensitive, with many able to detect pregnancy even before a missed period.

Initiating medical abortion at the very early stages of pregnancy offers several advantages, including a shorter time to termination and, consequently, a reduced duration of many pregnancy-associated symptoms. Nausea affects approximately 50-80% of pregnant women,[17,18] while vaginal bleeding occurs in up to 25% during the first trimester.[19] Early termination can lead to reduced pain and less bleeding.[16] Additionally, VEMA reduces the duration of care, the number of appointments, and clinical administrative time.[20]

Based on available evidence, medical abortion at very early gestation is effective and appropriate, provided there are no symptoms suggestive of an EP.[21] VEMA does not affect ectopic pregnancies, and treatment effectiveness can be monitored using pre- and post-abortion serum human chorionic gonadotropin (β-hCG) levels.[15]

However, while many women may opt for VEMA, this option is not consistently offered by all HCPs. Some providers are reluctant to perform medical abortions before confirming the location of an IUP via ultrasound due to concerns about the potential risk of a missed EP. It is crucial to address this concern directly: **the fear of EP and tubal rupture associated with VEMA is unfounded.** In fact, VEMA facilitates earlier detection and management of EP, thereby reducing the risk of rupture—this should be emphasized as a key takeaway.

To ensure patient safety, a serum β-hCG test should be conducted at the initiation of the medical abortion and repeated one week later. Furthermore, the recommendation to consider medical abortion before definitive IUP evidence (such as visualization of a yolk sac) in women without signs or symptoms of an EP is supported by the National Institute for Health and Care Excellence (NICE) 2019 UK abortion care guidelines.[22]

This guide is specifically tailored for HCPs involved in abortion care. Its primary purpose is to encourage the consideration of medical abortion at very early stages of pregnancy, even when the location of the pregnancy cannot yet be confirmed by ultrasound (i.e., no visible intrauterine gestational sac with a yolk sac). VEMA poses no additional risk to women who do not present signs or symptoms of an EP.

GENERAL INFORMATION ON VEMA

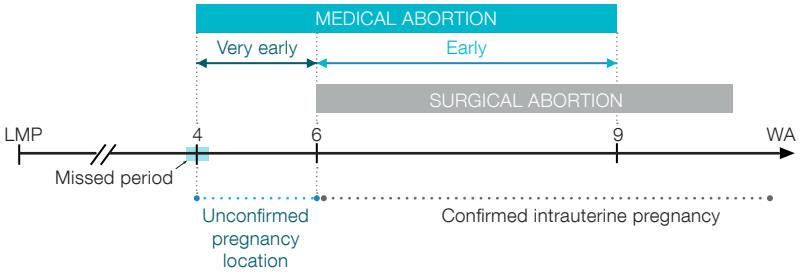
1. Definition

VEMA refers to a medical abortion performed when a woman has a positive pregnancy test, but the ultrasound does not yet show evidence of an IUP (no yolk sac or embryo) and there are no signs or symptoms of an EP.[13]

Women in this situation, with a positive pregnancy test but no definitive confirmation of an IUP, are typically classified as having a "pregnancy of unknown location" (PUL).[21]

VEMA is often described as a medical abortion typically performed between 4 to 6 weeks of amenorrhea, before the IUP becomes detectable on ultrasound (Figure 5).[14] This approach allows women to access abortion care without unnecessary delay, even in the absence of confirmed pregnancy location.

Figure 5. Abortion methods according to gestational age (adapted from the practical guides 'Early Medical Abortion' (2018)[23] and 'Medical Abortion beyond the 1st Trimester' (2015)).[24]



LMP: last menstrual period (first day); WA: weeks of amenorrhea.
Note: Please consult your national guidelines for specific recommendations.

CAUTION!

VEMA is not automatically associated with PUL. This "PUL" term is used when women have a positive pregnancy test but no confirmation of IUP or EP by ultrasound regardless of gestational age.[25]

TAKE-HOME MESSAGE

- VEMA refers to a medical abortion performed at a very early gestational age, typically below 6 weeks of amenorrhea, when the location of the pregnancy cannot yet be confirmed by ultrasound.

2. Medical abortion: mechanisms of action

Medical abortion achieves outcomes that are clinically indistinguishable from spontaneous abortion due to corpus luteum insufficiency.[26] The corpus luteum is responsible for producing progesterone, which is essential for maintaining the uterine environment and supporting early pregnancy. Insufficient progesterone production by the corpus luteum, known as luteal insufficiency, can lead to spontaneous abortion. Therefore, lutectomy performed before the luteoplacental shift results in a decrease in plasma progesterone, leading to increased uterine contractions and spontaneous abortion.[26]

It has been proposed that uterine activity during pregnancy is regulated by the balance between progesterone, an intrinsic suppressor, and the stimulant prostaglandin $PGF_2\alpha$.[27] Progesterone suppresses uterine contractions by inducing hyperpolarization of the myocyte cell membrane, making the cells less responsive to electrical stimulation. Additionally, progesterone inhibits the formation of gap junctions, thereby preventing coordinated uterine contractions. It also exerts effects on the cervix and the decidua, contributing to pregnancy maintenance.

Mifepristone as well as its metabolites are antagonists to progesterone binding to its receptor. Through this binding, mifepristone counteracts the effects of progesterone during pregnancy. Prevention of the progestogenic effect by mifepristone promotes significant cervical softening, ripening, and dilatation.[28–30]

Mifepristone not only softens, ripens, and dilates the cervix but also increases the myometrium's sensitivity to prostaglandin analogues.[31] This heightened responsiveness begins about 24 hours after administration and peaks at 36 to 48 hours. While prostaglandins alone raise uterine tone, prior treatment with mifepristone results in stronger, more coordinated contractions.[31,32] By blocking progesterone, which is essential for sustaining pregnancy, mifepristone both disrupts hormonal support and primes the uterus for PG-induced contractions. When combined with a PG analogue such as misoprostol, this synergy facilitates the expulsion of uterine contents, effectively completing the abortion process.[26]

The effectiveness of medical abortion regimens depends on several factors, including the dose of mifepristone, the time interval to PG administration, and the type, dose, and route of administration of the PG analogue.[26] Maternal factors such as gestational age and parity also play a significant role.

In summary, medical abortion using mifepristone followed by a PG analogue works by disrupting the hormonal environment necessary to sustain pregnancy. This leads to increased uterine contractility and expulsion of uterine contents, mimicking the physiological process of spontaneous abortion caused by corpus luteum insufficiency.

3. Use of VEMA

The proportion of very early abortions varies widely across European countries and individual centres. In some countries, very early abortions may account for more than a third of all induced abortions. This proportion could likely be even higher with improved access to abortion services (see Introduction - Very early Medical Abortion (VEMA)).

Table 2 presents national data showing the percentage of abortions performed before 5 weeks of gestation in selected European countries. These early abortions likely reflect, at least in part, the uptake of VEMA due to the early stage of pregnancy.

Table 2. Percentage of abortions performed before week 6 of gestation among all induced abortions in a selection of European countries – National statistics* 2021.[5]

Country	Total induced abortions per year* (n)	Percentage of abortions by gestational age (%) 0-5 weeks
Germany	94,596	9%
Belgium	16,702	11%
Czech Republic	15,492	12%
France	223,282	13%
England and Wales	214,869	23%
Netherlands	31,049	30%

** Cut-offs for gestational age vary across countries (e.g., cut-offs set at 2, 4, or 5 weeks of gestation for Belgium, and 4 and 6 weeks of gestation for Germany) and methods (medical or surgical).*

It is important to interpret these statistics with caution, as reporting methods vary between countries, and abortion laws and access differ widely. In 2021, abortions performed before 6 weeks of amenorrhea accounted for 41% and 43% of total abortions in Finland and Norway, respectively. In 2022, 61% of abortions in Sweden were performed before 7 weeks of amenorrhea.[5]

TAKE-HOME MESSAGE

- While there are no specific statistics on VEMA, the practice of performing medical abortion before 6 weeks of amenorrhea can be considered a safe medical practice.
- With the increasing number of women asking for an abortion at a very early gestational age, VEMA is gradually offered except by some providers who face barriers to its adoption.

4. Advantages and risks of VEMA

VEMA encompasses **all the benefits of medical abortion on confirmed IUP**, including:

- No impact on fertility and low complication rate following the procedure (e.g., infection, haemorrhage, severe abdominal pain, heavy bleeding)[33,34]
- The success of the method is independent of the practitioner
- Less invasive perception of the method by women who also feel more in control compared to the surgical option[35]
- Avoidance of anaesthesia and surgery[35]
- Flexible and self-managed method that can be done from home[36]

Additionally, **medical abortion performed at very early stages on unconfirmed IUP,** brings numerous additional benefits:[37]

- VEMA enables earlier detection and management of EP, thereby significantly reducing the risk of rupture
- If the initial attempt at medical abortion is unsuccessful, a repeat of the procedure can be offered to the woman, provided that an EP has been ruled out
- Pregnancy-associated symptoms (e.g., nausea, vomiting, breast tenderness) are shortened
- Number of visits can be reduced, along with the associated inconvenience and distress
- From public health and HCPs' perspectives, there is evidence that VEMA decreases healthcare utilization and management by reducing clinical appointments and administrative time. This can also help alleviate the burden on understaffed medical teams
- VEMA gives women more autonomy in the abortion process
- VEMA is associated with shorter durations of pain and bleeding, without compromising patient satisfaction

VEMA has been proven to be very safe and highly effective in numerous clinical trials, real-world studies, and routine clinical practice since 1999. A large randomized, controlled, multinational, multicentred trial published in 2024 demonstrated that initiating medical abortion early, before the pregnancy can be confirmed as intrauterine (IUP), is not inferior to delaying treatment. The study found both approaches to be equally effective in achieving complete abortion.[38] A 2023 systematic review involving 1,393 women also confirmed VEMA's high efficacy, with early detection of the few ectopic pregnancies and no adverse outcomes.[15] Additionally, an observational study from Scotland found that VEMA was associated with a more rapid diagnosis of ectopic pregnancy.[20]

Having an abortion very early in pregnancy may be seen as a disadvantage by some, as a small percentage of pregnancies would end in spontaneous miscarriage regardless. In such cases, the abortion might be considered unnecessary. While this argument has merit, several important factors should be considered:

- Most spontaneous miscarriages occur within the first 12 weeks of gestation, the period before the placenta fully takes over progesterone production from the corpus luteum. This means a woman would need to wait up to 12 weeks to be certain she will not miscarry naturally.
- While the decision ultimately lies with each individual woman, most prefer to terminate an unwanted pregnancy as early as possible, precisely because it is unwanted. Waiting for a potentially uncertain natural outcome often does not align with their personal needs or circumstances.

The main benefits and disadvantages of VEMA are summarized in Table 3.

Table 3. Main benefits and disadvantages specific to VEMA.[13,20,37,39,40]

Main benefits	Main disadvantages
• As safe and effective as for confirmed IUP • Earlier EP diagnosis and management • Reduced duration of care, number of clinical appointments, and administrative time • No routine ultrasound imaging • Reduced pregnancy-related symptoms • Reduced risk of abdominal pain and vaginal bleeding • Avoid unnecessary delay	• Unconfirmed pregnancy location • Follow-up with β-hCG monitoring • Slightly higher rate of failure on PUL (ongoing pregnancy) • Needs a bit more time to counsel the woman

β-hCG: beta-human chorionic gonadotropin; EP: ectopic pregnancy; IUP: intrauterine pregnancy; PUL: pregnancy of unknown location

TAKE-HOME MESSAGE

- VEMA is a safe and effective method that offers all the established benefits of medical abortion, with the added advantage of eliminating unnecessary delays and allowing for earlier detection and management of ectopic pregnancy.
- By shortening the duration of pregnancy, VEMA also helps reduce the intensity and persistence of pregnancy-related symptoms, providing important physical and psychological relief for women.
- These benefits translate into meaningful medical, psychological, and logistical advantages for both women and healthcare providers, including fewer clinical visits and more autonomy for patients.

5. Ectopic pregnancy

Some abortion providers may be reluctant to initiate medical abortion before ultrasound confirmation of an IUP, due to limited evidence and concerns of missing a diagnosis of EP.[20]

EP occurs when the gestational sac implants and develops outside the uterine cavity, with a **prevalence of 1-2%** in the general population.[41] In approximately 95% of EP cases, implantation occurs in one of the fallopian tubes. If an EP remains undiagnosed, the embryo can rapidly grow beyond the capacity of the fallopian tube, typically leading to rupture around 7 weeks of amenorrhea (WA). If left untreated, this can result in life-threatening haemorrhage.[42] Therefore, early diagnosis and prompt treatment are crucial.

However, diagnosing an unruptured EP can be challenging, especially at a very early gestational age. The most reliable methods for diagnosing EP include:

- A **positive pregnancy test**
- **Ultrasound imaging**, although results may be inconclusive or the technology may not be accessible
- **Repeat measurements of serum β-hCG levels** to monitor progression

Symptoms of EP can vary and may include:[43]

- Common symptoms: lower abdominal or pelvic pain (typically constant and localized to one side, unlike menstrual cramps), amenorrhea or missed period, and vaginal bleeding with or without clots
- Associated with typical pregnancy symptoms: breast tenderness
- Signs which may indicate rupture: gastrointestinal discomfort, dizziness, fainting or syncope, shoulder tip pain, urinary symptoms, passage of tissue, and rectal pressure or pain during defecation

Several risk factors for EP have been identified and include:[44,45]

- Use of assisted reproductive technologies
- Endometriosis
- Pregnancy with an intrauterine device or intrauterine system in place
- Previous EP
- Prior fallopian tube surgery
- History of pelvic surgery or pelvic inflammatory disease

CAUTION

In women presenting with symptoms suggestive of EP, VEMA should not be carried out.

Excluding an EP is not a prerequisite for initiating VEMA, particularly since it is often impossible to definitely rule out EP at such an early gestational age. Instead, it is crucial to maintain awareness of this rare risk, to inform the patient appropriately, and to establish a baseline serum β-hCG level for comparison with a follow-up measurement one week later.

This approach enables early detection of the rare cases of EP. Unfortunately, in routine clinical practice, many HCPs delay medical abortion due to concerns about EP. However, initiating VEMA without unnecessary delay facilitates timely identification and management of EP, should it occur (see Introduction - Determination of pregnancy location before 6 weeks).

TAKE-HOME MESSAGE

- Ectopic pregnancy, though rare, is a potentially serious medical condition due to the risk of fallopian tube rupture and subsequent haemorrhage.
- VEMA enables HCPs to detect an EP early. It is therefore suitable for all women who do not have a definite diagnosis of EP.

6. VEMA procedure, ultrasound imaging, and β-hCG dynamics

Before initiating VEMA, pregnancy is confirmed using either a urine or serum β-hCG test. **Monitoring β-hCG levels before and after the procedure is a highly reliable method** to confirm the success of VEMA and to detect any ongoing pregnancy, regardless of the location.[14,42] In a typical pregnancy, β-hCG levels double every 2-3 days between weeks 4 and 8. However, due to significant individual variations in β-hCG value, it is not reliable to determine gestational age based solely on β-hCG level. Approximately 98% of pregnant women have a positive β-hCG test by 4 weeks of amenorrhea, which many women perceive as a missed period.[46]

The correlation between serum β-hCG levels and ultrasound findings in early pregnancy is weak and highly variable, making it particularly challenging to exclude an EP at very early gestational stages. The risk of EP increases with rising β-hCG levels when no gestational sac or sac-like structure is visible on ultrasound. However, due to the wide individual variations in β-hCG, it is difficult to establish a specific β-hCG cutoff value at which an intrauterine sac or sac-like structure must be visible.

Various cutoff values have been described by different studies, but there is no universally accepted threshold. As one study aptly concludes: *"Using an arbitrary discriminatory zone as a basis to manage these women is not recommended on the basis of this study"*.[47]

Recommendation for clinical practice: Based on available evidence, patients with an initial β-hCG level above 1,500 IU/L and no visible sac or sac-like structure on ultrasound may be at higher risk of an EP and therefore require close follow-up with repeat β-hCG measurements and ultrasound examination to enable early diagnosis.

Table 4. **Comparison of β-hCG levels and ultrasound finding in VEMA patients with successful medical abortion without an EP.**[41]

	Empty uterine cavity n = 101	Sac-like structure without yolk sac n = 575
β-hCG value (IU/L)	< 1,300	1,600–4,500

After the VEMA procedure, the success of medical abortion is confirmed by a significant decline in β-hCG levels. The rate of β-hCG decrease varies considerably between individuals, but by one week post-abortion, serum β-hCG levels should have dropped by more than 80%.[14,48] Two weeks after abortion, serum β-hCG levels typically drop by 99%.[44] It can take up to eight weeks for β-hCG to become undetectable in the serum.[14]

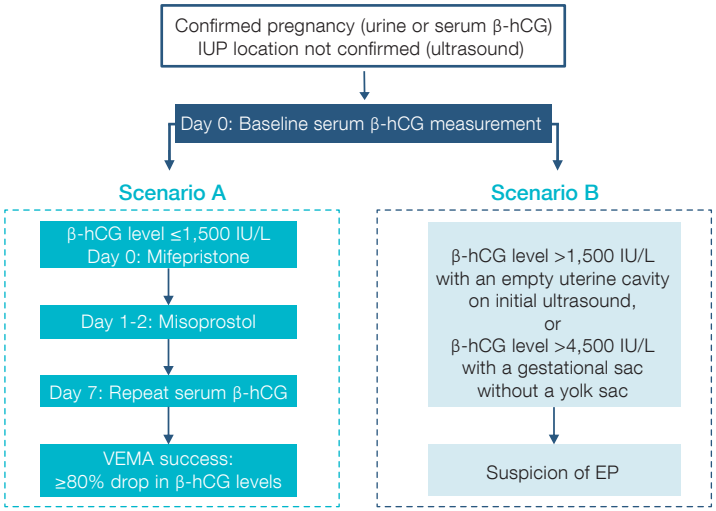
β-hCG level is the only reliable marker for monitoring medical abortion at very early stages of pregnancy when ultrasound cannot confirm the pregnancy location or presence of an IUP. In VEMA, serum β-hCG is measured on the same day of mifepristone administration (Day 0, baseline), and again seven days later (Day 7). Pregnancy resolution (successful VEMA) is defined as **at least an 80% decrease in serum β-hCG levels between Day 0 and Day 7** (Figure 6, Scenario A).[14,20,41] Alternatively, VEMA success can also be defined as a 50% or greater decline in serum β-hCG level at 48-72 hours after misoprostol administration.[49]

Baseline β-hCG levels in VEMA show considerable individual variability, and there is no consistent correlation between β-hCG levels and ultrasound findings. The threshold β-hCG level at which an intrauterine gestational sac should always be seen is not known.[50] However, the risk of an EP increases when there is a growing discrepancy between rising β-hCG levels and the absence of an identifiable IUP on ultrasound. Various studies have proposed different discriminatory β-hCG values for expecting to detect an IUP, but no universally accepted standard exists. Such cases warrant careful and close follow-up (Figure 6, Scenario B).[16,38,41,43]

IMPORTANT

- **β-hCG is a unique biomarker**, distinct from most other biological parameters that typically **fluctuate within narrow physiological ranges**. In contrast, β-hCG levels vary from **0 IU/L in non-pregnant women to over 200,000 IU/L in early pregnancy**. Its rapid decline following the end of a pregnancy makes it an **ideal marker for post-abortion follow-up**.
- Furthermore, the huge natural variability in β-hCG concentrations is much greater than any inter-laboratory variability, allowing for **reliable monitoring even when different laboratories are used** during follow-up.

Figure 6. β-hCG monitoring in case of pregnancy of unknown location.



β-hCG: human chorionic gonadotropin; EP: ectopic pregnancy; IU: international units; IUP: intrauterine pregnancy; L: litre; VEMA: Very Early Medical Abortion (adapted from Tai et al. 2023,[20] Lipscomb et al. 2000,[50] Jar-Allah et al. 2022[41])

By measuring β-hCG levels both at the beginning and after VEMA, early detection and management of EP is possible. Elevated β-hCG levels at baseline or no significant decrease in β-hCG levels at follow-up may indicate EP.[41]

It is important to emphasize that obtaining the β-hCG result is not a prerequisite for initiating VEMA. The initial β-hCG measurement primarily serves as a baseline reference for follow-up, rather than a decision-making threshold for treatment initiation. However, if the initial β-hCG level is elevated, prompt contact with the patient and closer clinical follow-up are essential. The term "suspicion of EP" refers to a potentially life-threatening condition that, if left undiagnosed, may lead to serious complications such as tubal rupture and internal bleeding. Therefore, early identification and vigilant monitoring are critical to ensuring patient safety while maintaining access to timely abortion care.

CAUTION

It is essential to note that medical abortion is NOT a treatment for EP, and symptoms of EP can be masked by medical abortion.

TAKE-HOME MESSAGE

- Successful VEMA is defined as a serum β-hCG decrease of at least 80% by Day 7 from baseline (Day 0 - the first day of medical abortion treatment).
- In VEMA, an initial β-hCG level >1,500 IU/L with an empty uterine cavity on the initial ultrasound, or >4,500 IU/L accompanied by a gestational sac without a yolk sac, raises suspicion of EP. These findings provide an opportunity for early identification and management of EP.

MANAGEMENT OF VEMA

1. Procedure overview

VEMA is a medical abortion procedure used for pregnancies with an unconfirmed intrauterine pregnancy (IUP) or an unverifiable location. It consists of three phases:

- **Pre-abortion phase:** clinical assessments to confirm pregnancy and evaluate eligibility.
- **Treatment phase:** administration of mifepristone followed by misoprostol to induce pregnancy termination.
- **Post-abortion phase:** monitoring to confirm completion, manage any side effects, and provide emotional support.

2. Pre-abortion care

As with medical abortion for confirmed IUP, pre-abortion care for VEMA requires specific steps to ensure patient safety and effective procedure management. These include counselling, pregnancy confirmation, assessment of medical eligibility, and obtaining informed consent. Together, these measures support informed decision-making and help ensure a safe and successful process.

Additional important considerations:

- The patient should be counselled regarding the very low risk of a missed ectopic pregnancy, advised on potential symptoms to watch for, and informed about available treatment options.
- Abortion success must be confirmed through repeat quantitative β-hCG testing (typically via serum measurements).
- Follow-up should occur not later than 1 week after treatment initiation.

A systematic approach to determining women's eligibility for VEMA is detailed in VEMA Resources - Decision tree to determine eligibility for VEMA.

2.1. Contraindications and precautions for VEMA

Women with a confirmed pregnancy and ultrasound findings consistent with less than 6 weeks of amenorrhea are eligible for VEMA. Contraindications and cautions related to the procedure, and the mifepristone-misoprostol regimen are summarized in Table 5.

Table 5. **Contraindications and cautions for early medical abortion.**[51]

Contraindications
• Negative pregnancy test
• Confirmed or suspected ectopic pregnancy
• Previous known allergy to prostaglandins
• Severe asthma uncontrolled by therapy
• Inherited porphyria – there is a theoretical risk of precipitating or exacerbating attacks of porphyria, but no data are available
• Chronic adrenal failure
• Hypersensitivity to anticoagulation medication
• Not able to communicate and explain the procedure and what to do in case of an EP
Cautions
• Malnutrition
• Hepatic failure
• Renal failure
• Intrauterine device in place - if the intrauterine device cannot be removed, surgical abortion is the recommended safe option
• Mental instability which may interfere with going through the treatment process

Note: The contraindications for VEMA are identical to those for early medical abortion.

2.2. Counselling

Abortion counselling provides women with guidance, information, and emotional support in a safe, confidential setting. It should offer accurate, evidence-based details on the risks, benefits, and limits of VEMA, address concerns, and support informed decision-making. Care should always be respectful and non-judgmental, helping individuals choose the method best suited to their gestational age and medical needs.

When counselling women considering VEMA, it is important to address the following:[52,53]

- **Comprehensive information on VEMA**: Its safety, high effectiveness, rare need of surgical intervention, benefits, lack of negative impact on future fertility, and potential drawbacks.

- **Treatment details**:
  - Clarify that medical abortion is a process
  - Describe the use of antiprogestogen and prostaglandin analogues
  - Mention the irreversibility of the procedure
  - Outline possible side effects (e.g., cramping, heavy bleeding)[54]
- **Pain management options**: Available options, including analgesics and antiemetics, to reduce discomfort.
- **Expectations**: A clear overview of the procedure, including required tests, expected physical experiences (e.g., pain, bleeding), and the estimated duration of the process.
- **Complication awareness**: How to recognize signs of potential complications and when and where to seek medical assistance.
- **Resumption of normal activities**: Guidance on when daily activities, including sexual intercourse, can be resumed, emphasizing that abortion has no long-term effects on overall health, reproductive health, fertility, psychological well-being, or breast cancer risk.[55]
- **Follow-up care and contraception**: Recommendations for post-procedure care and options for preventing future unintended pregnancies, including the immediate start of effective contraception.
- **Legal and reporting requirements**: Any applicable legal obligations or reporting procedures related to VEMA.

IMPORTANT

- Effective counselling requires time and clear communication to help women manage physical symptoms as well as anxiety and stress.
- Use simple, straightforward language, respect privacy, address the woman's questions and needs thoroughly, and avoid imposing personal beliefs or values.
- The need for effective contraception after VEMA should be discussed and women should be supported in accessing the method of choice.

2.3. β-hCG measurements

When a pregnancy is too early to be visualized by ultrasound, pregnancy confirmation should be obtained through serum or urine β-hCG testing.

In a typical pregnancy, β-hCG level approximately doubles every 2 to 3 days between 4 and 8 weeks of amenorrhea. However, individual variation is substantial, making quantitative β-hCG levels unreliable for accurately determining gestational age at very early stages.[15,41,56]

Qualitative β-hCG tests are positive in approximately 98% of pregnant women by 4 weeks of amenorrhea.[46]

In the context of VEMA, baseline serum β-hCG levels in pregnancies that are not visible on ultrasound are generally:

- Below 1,500 IU/L if the uterine cavity is empty on ultrasound
- Below 4,500 IU/L when a gestational sac or sac-like structure is present without a visible yolk sac (Table 6).

If β-hCG levels are above 1,500 IU/L with an empty uterine cavity on ultrasound or above 4,500 IU/L with a gestational sac but no yolk sac, this raises suspicion of a possible EP, prompting early evaluation and intervention.[15,41,43,57,58]

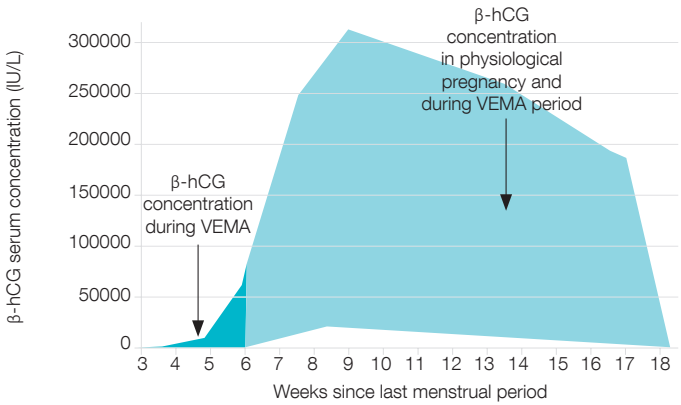
Table 6. β-hCG levels corresponding to ultrasonography finding.

Sac-like structure (mm)	Median β-hCG (IU/L)	Range (IU/L)
PUL (empty uterine cavity)	708	376 – 1,297
Sac <10 mm	2,728	1,600 – 4,497
Sac 10-14 mm	7,123	4,759 – 12,560
Sac 15-19 mm	9,270	4,600 – 22,340

β-hCG: beta-human chorionic gonadotropin; PUL: pregnancy of unknown location, (adapted from Jar-Allah et al. 2022)[41]

Figure 7 illustrates serum β-hCG concentrations during a physiological pregnancy, particularly focusing on the very early period between 4 and 6 weeks of amenorrhea.

Figure 7. β-hCG concentrations in physiological pregnancy and during VEMA period, adapted from Montagnana et al. 2011.[56]



2.4. Rhesus testing and other examinations

The management of RhD status and anti-D prophylaxis for RhD-negative women undergoing first-trimester abortion remains debated, with considerable variations across international and national guidelines.[59-61] The 2022 WHO guidelines recommend anti-D prophylaxis only for RhD-negative women at ≥12 weeks of amenorrhea, based on recent evidence and practical considerations.[10,60-63]

These findings suggest that routine administration of anti-D immunoglobulin (IgG anti-D) in RhD-negative women may not be necessary, particularly before 6 weeks of amenorrhea. This approach helps reduce unnecessary medical interventions and associated costs while maintaining patient safety. Aligning with WHO guidance supports an evidence-based approach, minimizing potential risks for women, and ensuring efficient use of resources.

In countries with a high prevalence of RhD-negative individuals and in resource-rich settings, Rhesus typing and anti-D prophylaxis may still be offered as precautionary measures. However, there is currently no evidence of maternal RhD alloimmunization in abortions occurring within the first 9 weeks of amenorrhea.[10,62,64,65]

Unless required for procedural safety or specific indications, cervical cytology and other laboratory tests are not necessary before VEMA. Medical abortion treatment should not be delayed while awaiting laboratory or other test results.[64]

TAKE-HOME MESSAGE

- **Women under 6 WA are eligible for VEMA,** except in cases of contraindications.
- **Counselling is essential** to ensure women are informed about VEMA, potential side effects, pain management, and follow-up care, enabling safe and informed decisions.
- **A serum or urine β-hCG test should be used to confirm pregnancy in VEMA.** While β-hCG levels typically double every 2-3 days between 4 and 8 WA, individual variations make it unreliable for precise dating. However, β-hCG tests are positive in about 98% of women by 4 WA.
- **Possible ectopic pregnancy (EP) should be considered** if β-hCG levels exceed 1,500 IU/L with an empty uterine cavity, or 4,500 IU/L when a gestational sac is seen without a yolk sac, allowing early detection and management.
- **VEMA should not be delayed** for RhD testing, anti-D prophylaxis, cervical cytology and other laboratory tests unless specifically indicated.
- **Baseline serum β-hCG should be measured on the same day mifepristone is administered** to support effective follow-up monitoring.
- **If treatment is delayed, repeat β-hCG testing** to ensure accurate monitoring and confirmation of complete abortion.

3. Treatment

3.1. VEMA treatment

As with all medical abortions, VEMA treatment begins with the administration of mifepristone on the same day as the baseline serum β-hCG is measured, followed by misoprostol one to two days later. Sequential administration is essential for effective pregnancy expulsion, as simultaneous administration has been shown to be significantly less effective.[66,67] For VEMA specifically, current guidelines recommend maintaining a 24 to 48 hours interval between the two medications.[15,20]

Various evidence-based regimens for early medical abortion are available and outlined in Table 7.

Table 7. Recommended regimens for early medical abortion.

Recommendations (year)		Mifepristone dosage (route)	Misoprostol dosage (route)	Drug interval (hours)
WHO (2022)[10] RCOG (2020)[68] FIGO (2023)[69]		200 mg (oral)	800 µg (vaginal, sublingual, or buccal)	24 - 48
HAS (2021)[70]	≤ 7 WA	600 mg (oral)	400 µg (oral)	24 - 48
		200 mg (oral)	400 µg (buccal or sublingual)	24 - 48
	≤ 9 WA	200 mg (oral)	800 µg (buccal or sublingual)	24 - 48

FIGO: International Federation of Gynecology and Obstetrics; HAS: Haute Autorité de Santé (French Health Authorities); RCOG: Royal College of Obstetricians and Gynaecologists (UK); WA: weeks of amenorrhea; WHO: World Health Organisation.

The protocols commonly used for VEMA are:

- **For pregnancies up to 7 WA:** 600 mg mifepristone taken orally, followed 24 to 48 hours later by 400 µg misoprostol taken orally.
- **For pregnancies up to 9 WA:** 200 mg mifepristone taken orally, followed 24 to 48 hours later by 800 µg misoprostol taken vaginally, buccally or sublingually.

Please refer to the product SmPC and local guidelines for specific dosage recommendations.

FOR INFORMATION

- Mifepristone is typically administered under healthcare supervision, while misoprostol can be taken at home. In some countries, mifepristone may also be self-administered at home, depending on local regulations.
- If mifepristone is taken at a healthcare facility, the woman may leave immediately afterwards.
- For pregnancies occurring despite an intrauterine device, the device must be removed prior to the start of treatment.
- Special care is needed when handling misoprostol tablets; if the blister is damaged, the tablet may lose efficacy due to exposure to air humidity and should not be used.[71]
- For women experiencing severe early pregnancy vomiting, vaginal administration of misoprostol may be preferred over oral. However, because the association between vaginal misoprostol and increased risks of infection or septic/toxic shock syndrome remains unclear, close monitoring is recommended.[72,73]
- If bleeding does not begin within 3 hours after misoprostol administration, an additional 400 µg dose of misoprostol may be considered.

3.2. Potential safety concerns

When performed by experienced HCPs following established guidelines, **VEMA is as safe as medical abortion for pregnancies with a confirmed intrauterine location**.[1,13,20,74] The safety profile of VEMA mirrors that of medical abortion more broadly. The most common side effects include **uterine contractions**, **pain**, **and vaginal bleeding**, while rare complications may involve severe bleeding or infection.[54] Ongoing pregnancy is considered a treatment failure, not a complication.

Women should be informed about the risk of complications and advised on when and where to seek medical attention, such as an emergency department, if they experience warning signs, including persistent fever, chills, severe abdominal pain, heavy bleeding, or fainting. Table 8 provides an overview of potential safety concerns related to medical abortion.

Table 8. Potential side effects and complications associated with medical abortion.

	Description	Recommended action
Side effects		
Pain	• Caused by uterine contractions and expulsion of the gestational sac • Most intense in the first few hours post-misoprostol administration • Persistent severe pain may constitute a complication	• Advise women to use painkillers concurrently with misoprostol[66] • Use NSAIDs such as ibuprofen or acetaminophen (paracetamol) as an alternative[75] • Opioid for severe pain in rare cases • Additional comfort measures: abdominal massage, hot-water bottle, supportive care
Bleeding	• Begins a few hours after misoprostol administration, initially heavy with clots • Lasts for 2-4 hours, then lighter bleeding for ~2 weeks	• Inform women on what to expect • Seek medical attention if bleeding becomes excessively heavy or prolonged • Use uterotonic medication or transfer to a hospital if severe
Nausea and vomiting	• Common during pregnancy and abortion treatment • Symptoms are transient and dose-dependent, lasting 1-2 hours	• Use anti-emetic medications if symptoms are severe
Diarrhoea	• Caused by misoprostol's effect on intestinal muscles • Symptoms are transient and dose-dependent, lasting 1-2 hours	• Use anti-diarrheal medications if symptoms are severe
Fever	• Temporary rise in body temperature (1-3 hours post-misoprostol) • Persistent fever >38°C for >3 hours may indicate infection • Symptoms like shivering, hypothermia, malaise, and abnormal vaginal discharge require medical evaluation	• Manage with symptomatic treatment and reassurance • Seek medical attention if fever persists >3 hours or appears >12 hours post-administration
Headache	• Occurs in ~25% of women undergoing medical abortion	• Provide reassurance and analgesia if needed
Complications		
Severe haemorrhage	• Rare • May require intravenous fluids, surgical intervention, and possibly transfusion	• Seek immediate medical attention • Ensure facilities are equipped to manage or refer quickly
Infection	• Symptoms: fever, foul-smelling discharge, persistent pain, prolonged bleeding • Similar risk to spontaneous abortion	• Use antibiotics[66] • Evacuate retained products if necessary • Hospital admission for severe cases
Persistent severe pain	• May indicate infection if lasting several days post-misoprostol administration	• Evaluate for potential infection and administer appropriate treatment
Excessive bleeding	• May indicate complications if soaking >2-3 sanitary pads/hour for >2-3 hours	• Seek immediate medical attention • Use uterotonic medication or transfer to a hospital if severe

Management of VEMA

TAKE-HOME MESSAGE

- VEMA treatment involves the sequential administration of mifepristone followed by misoprostol, with a 24-48-hour interval between doses.
- Side effects of VEMA are similar to those of medical abortion for confirmed intrauterine pregnancies, including pain, bleeding, nausea, and fever. Severe complications are rare but require prompt medical evaluation.
- Women should be clearly informed about how and where to seek medical care in case of severe symptoms, and healthcare facilities must be equipped to manage serious cases.

4. Post-abortion care (follow-up)

The objective of post-abortion care is to confirm pregnancy termination, identify and manage any complications, provide psychological support if necessary, and discuss contraception options. Routine **follow-up after VEMA is mandatory** and should occur **within 1 week**.[10]

4.1. How to confirm VEMA success?

VEMA is highly effective, with complete abortion rates exceeding 90%.[20,41,76,77] To confirm its success, monitoring β-hCG levels through urine† or serum testing is essential, as ultrasound is not reliable at this early stage of pregnancy.[14] β-hCG levels should be measured within 1 week after treatment initiation to ensure the hormone levels are decreasing appropriately, indicating successful treatment.[20,78]

A complete abortion is defined by at least **an 80% reduction in serum β-hCG levels from Day 0 (day of mifepristone intake) to Day 7** (Figure 6). Within 24 hours of taking misoprostol, serum β-hCG levels typically drop by about 70%, followed by a more gradual decline.[20,41,44]

† Low sensitive urine pregnancy test can be used for follow-up VEMA when initial value of β-hCG levels is much higher than the pregnancy test cut-off (typically 500 to 1000 IU/L).

In rare cases, β-hCG levels may persist or increase compared to the baseline value on Day 0, indicating one of the following:[10,79]

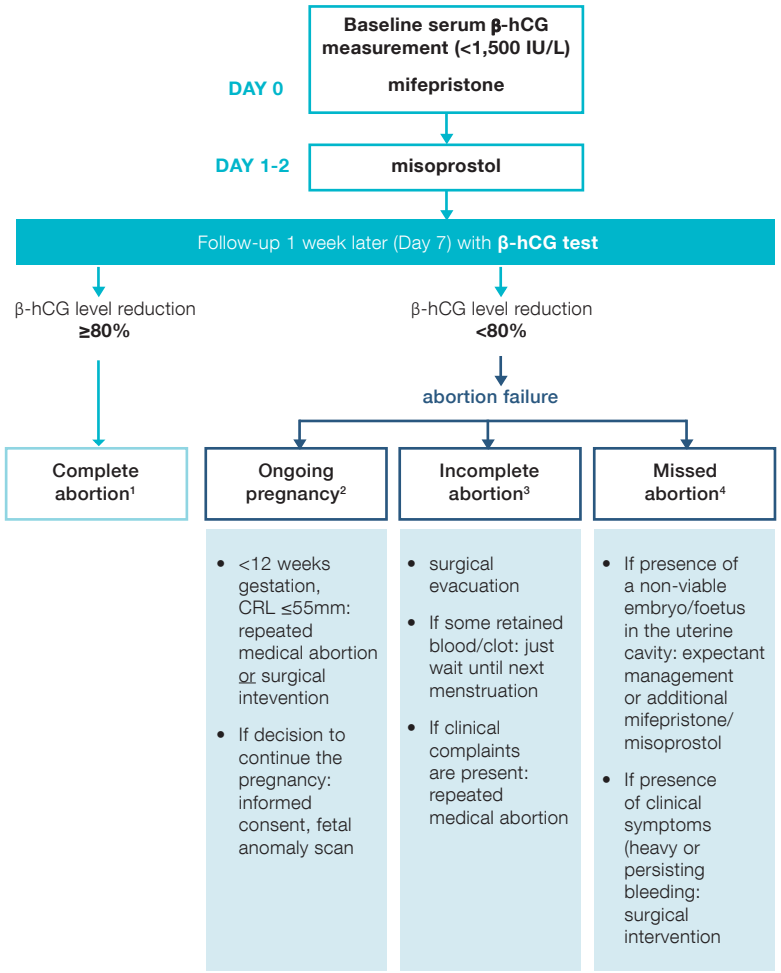
- **Incomplete abortion** (2–11% of cases): Characterized by an open cervical os and bleeding, where not all products of conception have been expelled from the uterus, or the expelled tissue is inconsistent with the estimated pregnancy duration. Common symptoms include vaginal bleeding and abdominal pain.[79]
- **Missed abortion** (1.3–7.5% of cases): Defined by the presence of a gestational sac without embryonic development or cardiac activity.[79]
- **Ongoing pregnancy** (0–1.5% of cases): The pregnancy continues, which may occur temporarily even after a successful abortion or may indicate treatment failure.[79]

4.2. What to do in case of failure?

Effective management of treatment failure after VEMA is essential to ensure **patient safety**, **address complications**, **and provide appropriate care for ongoing pregnancies**, **incomplete abortions or missed abortions**.

Figure 8 provides an overview of post-abortion care options following VEMA.

Figure 8. **Management of treatment failure after VEMA.**



β-hCG: beta human chorionic gonadotropin; CRL: crown-rump length

[1] Defined as the expulsion without the need of any other observation (expectant management) or additional treatment (misoprostol or surgery)
[2] Defined as the continuation of the pregnancy, which may occur temporarily even after a successful abortion or may indicate treatment failure
[3] Defined as an open cervical os with bleeding, where not all products of conception have been expelled from the uterus, or the expelled tissue is inconsistent with the estimated pregnancy duration. Common symptoms include vaginal bleeding and abdominal pain
[4] Defined by the presence of a gestational sac without embryonic development or cardiac activity
Adapted from Slunska et al. 2017[79] and Bizjak et al. 2017[16]

4.3. Post-abortion contraception

The HCP should initiate contraceptive consultation with the woman. It is important to **start contraception without delay**, as fertility can resume as early as 8 to 10 days after the procedure.[80,81]

Contraceptive options and their recommended start times include:[82]

- **Combined hormonal contraceptives** (pills, rings, patches) and **oral progestin only pills**: these can be initiated on the same day as mifepristone.
- **Injectable contraceptives** can be started after misoprostol and **implants** can be started as early as the day of mifepristone intake.
- **Intrauterine devices** (both hormonal and non-hormonal): these can be inserted one week post-abortion.

This approach ensures uninterrupted contraceptive coverage and minimizes the risk of unintended pregnancy during the immediate post-abortion period.

TAKE-HOME MESSAGE

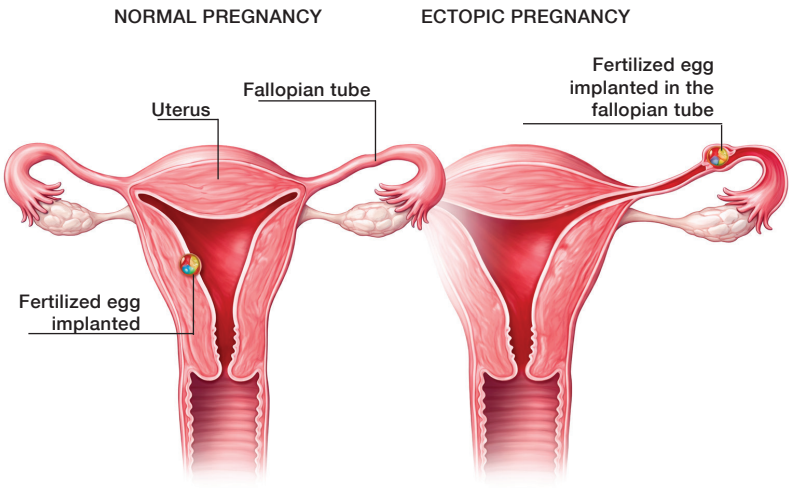
- Serum β-hCG monitoring is required to confirm VEMA success or detect abortion failures (ongoing pregnancy, incomplete abortion, missed abortion).
- In case of treatment failure, options include repeat medical treatment or surgical intervention, depending on gestational age and woman's preference.
- Contraception should be considered immediately after abortion.

5. Particular case: ectopic pregnancy

5.1. Definition and clinical symptoms

Ectopic pregnancy (EP) affects approximately 1–2% of all pregnancies and occurs when an embryo implants and grows outside the uterine cavity (Figure 9), most commonly in a fallopian tube (over 90% of cases).[41,45,83] Since EP can be life-threatening, early diagnosis is critical.

Figure 9. Intrauterine versus ectopic pregnancy.



adapted from ©Mayo Clinic

Source: Mayo Clinic. « Ectopic Pregnancy: Rare but Potentially Life-Threatening-Ectopic Pregnancy - Symptoms & Causes ». Accessed March, 2026. https://www.mayoclinic.org/diseases-conditions/ectopic-pregnancy/symptoms-causes/syc-20372088.

In its early stages, an EP may present with symptoms similar to a normal pregnancy, such as a missed period, breast tenderness, or nausea. Additional signs can include abnormal vaginal bleeding, low back pain, mild abdominal or pelvic pain, and cramping localized to one side of the pelvis.[83] As the pregnancy progresses, there is a risk of tubal rupture, which can cause severe internal bleeding. This is a life-threatening emergency that requires immediate surgical intervention.[42,83]

5.2. EP considerations in the context of VEMA

Role of β-hCG in EP detection

Follow-up after VEMA is essential. If β-hCG levels plateau or increase instead of declining (e.g., an increase greater than 63% after 48 hours),[43] this may indicate a possible EP, requiring further evaluation and potentially urgent intervention.[41] Conversely, a decline of more than 80% in serum β-hCG levels within 7 days after taking mifepristone confirms the success of VEMA and indicates that the pregnancy has been successfully terminated.

Ultrasound

To diagnose an EP, β-hCG levels should be evaluated in conjunction with findings from transvaginal ultrasound or transabdominal ultrasound.[45] Transvaginal ultrasound, however, has proven to be more accurate and sensitive than transabdominal ultrasound for early detection of EP.[84] Ultrasound findings suggestive of EP may include the presence of an adnexal mass, significant free fluid in the pelvis (suggestive of haemoperitoneum), or the absence of an intrauterine gestational sac despite elevated β-hCG levels.[43] Early recognition of these signs is crucial for timely intervention.

Table 9 summarizes diagnostic methods for ectopic pregnancy, including clinical symptoms and β-hCG serology.

Table 9. EP diagnosis methods.

Clinical symptoms
• Pregnancy signs (missed menstrual period or tender breasts)
• Abnormal vaginal bleeding
• Low back pain
• Mild pain in the abdomen or pelvis
• Mild cramping on one side of the pelvis
β-hCG serology
• β-hCG levels >1,500 IU/L with an empty uterine cavity on initial ultrasound, or β-hCG level >4,500 IU/L with a gestational sac without a yolk sac
• Serum β-hCG levels rising by 63% in 48 hours suggest EP (accuracy of 80.2%)[22]
Ultrasound visualization
• Transvaginal or transabdominal ultrasound

Adapted from Mullany et al. 2023[45]

TAKE-HOME MESSAGE

- EP can be diagnosed before and after VEMA by correlating serum β-hCG levels.
- Before VEMA: An initial β-hCG level of >1,500 IU/L with an empty uterine cavity on ultrasound, or >4,500 IU/L with a gestational sac without a yolk sac suggests EP, while levels below 1,500 IU/L* typically rule it out.
- At follow-up after VEMA: Plateaued or rising β-hCG levels indicate a potential EP, while a ≥80% reduction in β-hCG levels reliably rules out EP.
- If EP is suspected, VEMA treatment should be withheld to prioritise EP management.

**Refer to your local recommendation for appropriate threshold value*

6. Acceptability by women and healthcare providers

In recent years, VEMA has gained **widespread acceptance among women and HCPs.** A 2020 international survey of 220 HCPs found that 61% had observed an increase in abortion requests at very early stages (before 5 weeks of amenorrhea) (Table 1). Furthermore, 93% of providers worked in settings where such requests were common, and 57% initiated VEMA treatment immediately following the woman's decision, even without confirming an IUP.[13] Local or regional guidelines for VEMA were in place for 63% of respondents, with 62% recommending immediate treatment upon request.[13]

Advancements in medical protocols and the rise of telemedicine, particularly since the COVID-19 pandemic, have enhanced the feasibility and convenience of VEMA, contributing to its broader acceptance.[85] Nevertheless, its adoption remains inconsistent, as perceptions of VEMA's benefits and risks vary among both women and HCPs (see General information on VEMA - Use of VEMA).[13]

Table 10 highlights the key factors influencing both the preference and reluctance toward VEMA among women and HCPs.

Table 10. Benefits and challenges of VEMA for women and HCPs.

	Very Early Medical Abortion	
	Benefits	**Challenges**
Women	• As safe and effective as early medical abortion on confirmed IUP, with similar low complication rate[86] • Pregnancy termination without unnecessary delays[13,87] • Less stress associated with delayed treatment[15] • Shorter period with pregnancy-related symptoms[13] • Earlier outcome and follow-up including in case of failure[13] • Less bleeding and pain[13] • Enough time to make the decision[13] • Avoid additional visits and further investigations[15,86] • No need to demonstrate pregnancy viability[86] • Costless[15] • VEMA procedure can take place at home[86]	• Risk of unnecessary treatment is case of EP or spontaneous miscarriage later[13] • Follow-up visit may be necessary to check serum β-hCG levels decrease, depending on local recommendations[13] • Blood test for diagnosis and initial β-hCG level[13]
HCPs	• Helps diagnose or rule out an EP earlier (even asymptomatic)[13,87,88] • Low complication rate (as low as early medical abortion)[86] • Shorter overall duration of the abortion process[87] • Cost less[15]	• Slightly lower rate of successful abortion (PUL vs probable IUP)[15] • Concerns related to the risk of unknown pregnancy location and an undiagnosed EP[89] • Lack of information about VEMA[13] • Potential legal and accessibility issues

β-hCG: Beta human chorionic gonadotropin; EP: Ectopic Pregnancy; HCPs: Healthcare professional(s); IUP: Intrauterine Pregnancy; PUL: Pregnancy of Unknown Location; VEMA: Very Early Medical Abortion

TAKE-HOME MESSAGE

- Growing demand from women and positive feedback from providers signal increasing VEMA acceptance, though concerns remain.
- Clear information, education, and guidelines for patients and HCPs are crucial for its continued adoption and safe implementation.

7. Service delivery implications

The implementation of VEMA requires a healthcare framework that guarantees early and safe access to abortion while delivering high-quality, patient-centered care in compliance with legal and ethical standards. VEMA can be performed in various settings, including hospitals, clinics, general practitioners' offices, specialized health centers, or even at home, depending on national regulations. In many European countries, particularly since the COVID-19 pandemic, home-based VEMA has gained increasing authorization and support.[90]

Telephone follow-up and self-performed urine pregnancy testing

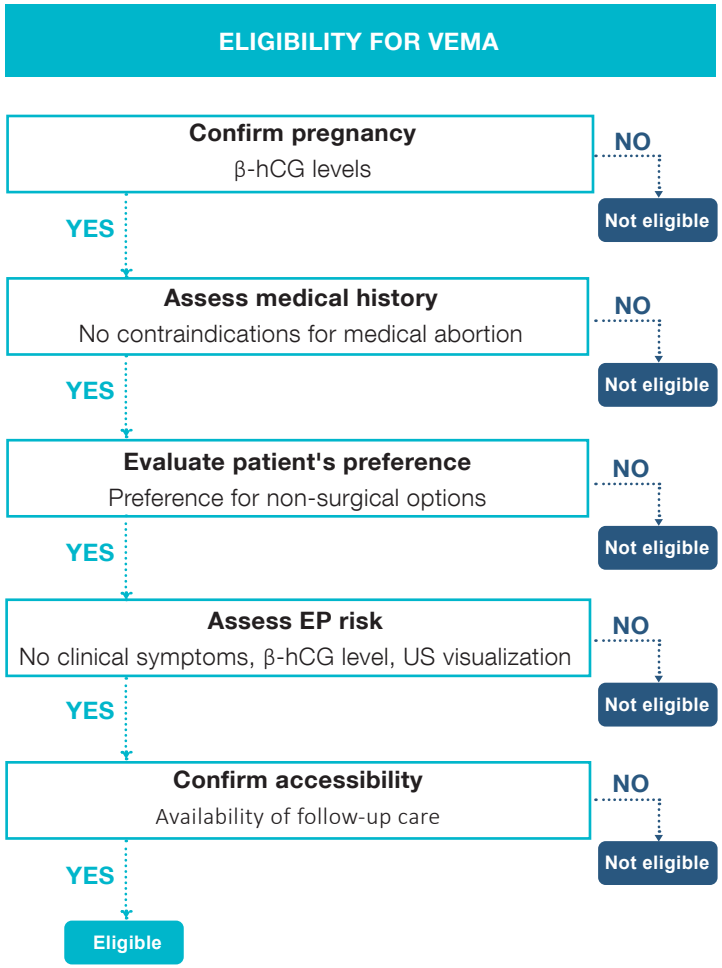
Depending on local regulations, women undergoing VEMA procedure may take mifepristone at home or return home after receiving it and then self-administer misoprostol at home 24 to 48 hours later.

As a result, low-sensitivity urine pregnancy (LSUP) tests, combined with a follow-up questionnaire assessing bleeding and pregnancy symptoms two weeks after VEMA, serve as a reliable screening tool for detecting ongoing pregnancy or complications.

It is important to note that **high-sensitivity urine pregnancy (HSUP) tests**, which detect lower levels of β-hCG (around 25 IU/L) and are commonly available in pharmacies, **should not be used until 4 weeks after medical abortion**.[91]

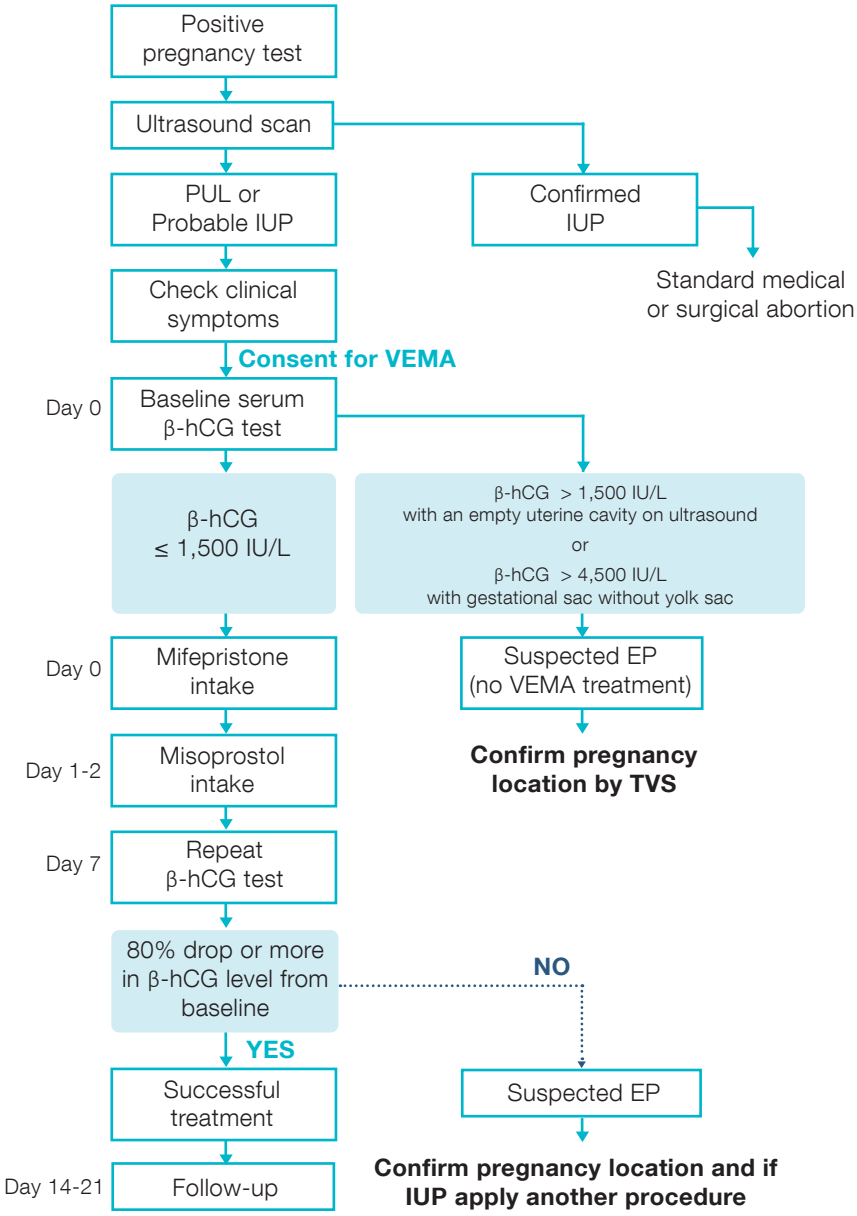
VEMA RESOURCES

1. Decision tree to determine eligibility for VEMA



β-hCG: human chorionic gonadotropin; EP: ectopic pregnancy; US: ultrasound; VEMA: very early medical abortion

2. Example of VEMA protocol



β-hCG: beta-human chorionic gonadotropin; EP: ectopic pregnancy; IU: International Unit; IUP: Intrauterine pregnancy; PUL: Pregnancy of Unknown Location; TVS: transvaginal sonography; VEMA: Very early medical abortion

VEMA resources

3. Decision aid for early medical abortion without ultrasound[68]

Decision aid for early medical abortion without ultrasound

Clinician name:

Date and time:

Signature:

Affix Patient Label

Name

DOB

Number

QUESTIONS TO ASK THE PATIENT

1 **Have you had a scan in this pregnancy?**

Follow-up questions:
- What was the date of the scan and how many weeks and days was the pregnancy then?
- Where was the scan performed?

Clinician action: If scan available and from NHS provider, take the gestation date as accurate and skip to step 6.

2 **Do you know the date your last menstrual period began?**
(first day of proper bleeding - do not count light spotting prior to your full period)

Follow-up questions:
- What was the date?
  If unsure, can you either estimate the date when your period started, or how many weeks ago it was?
- Do you usually get periods (proper bleeding, not just spotting) more frequently than once every 6 weeks?

Clinician action: Book scan if:
- unable to provide a date or estimate
- periods less frequent than every 6 weeks
- date of conception not certain

3 **Was it a normal period, or was it especially light or heavy?**

Follow-up questions:
- If especially light or just spotting, when was the first day of your last normal period?
- If especially heavy, have you done a pregnancy test in the last few days?

Clinician action:
- If especially light or just spotting, take date of the last (normal) menstrual period as accurate
- If particulary heavy, ensure they have repeated a pregnancy test and take the date of last menstrual period as accurate

VEMA resources

4

In the last 3 months, have you been taking the contraceptive pill or other hormonal contraception, or been breastfeeding?

Follow-up questions:
- Have you been having regular periods until the last missed period?
- When did you start to get feelings of being pregnant?

Clinician action: If uncertain, book scan

5

Are any of the following statements true for you?
- You have experienced abdominal ('tummy') or pelvic pain which is worse on one side, and vaginal bleeding/spotting
- You had an intrauterine device (e.g., 'contraceptive coil', 'Mirena', 'Jaydess', 'Kyleena', 'Levosert') in place when you conceived
- You have experienced a previous ectopic pregnancy
- You have been informed, following an operation or scan, that your fallopian tubes (which connect the ovaries to the womb) are damaged
- You have had surgery on your fallopian tubes

Clinician action: If "yes" to any, book scan

6

Gestation estimated to be < 10 weeks and no indication for scan

Offer early medical abortion without ultrasound

Where early medical abortion without ultrasound is being offered, consider and discuss the following:
- Some pregnancies (less than one in a thousand) may be developing outside of the womb and are known as an 'ectopic pregnancy'
- An early medical abortion remains safe, but will not treat the ectopic pregnancy; it is important that the ectopic pregnancy is identified
- You will be given advice about what to expect and what tests are needed to make sure the abortion care you receive is effective
- In the unlikely event you do develop worsening pain after your abortion care, especially if this is under your ribs or shoots up into your shoulder, then you should seek medical help immediately
- This advice is the same for anybody in early pregnancy who develops symptoms of an ectopic pregnancy, whether they choose to have abortion care or to continue pregnancy
- If you have to seek help, tell the doctor or nurse that you have had an early medical abortion without ultrasound

Royal College of Obstetricians & Gynaecologists

4. Example of patient information sheet

PATIENT INFORMATION SHEET

INFORMATION ON VERY EARLY MEDICAL ABORTION (VEMA)

YOU HAVE DECIDED TO TERMINATE YOUR PREGNANCY MEDICALLY.

The medical method is carried out in 3 steps and consists of taking 2 drugs:

- mifepristone,
- and 24 to 48h later: misoprostol (prostaglandin).

Mifepristone and misoprostol (prostaglandin) work together to induce an abortion.

- Mifepristone terminates the pregnancy by blocking the hormone needed to maintain the pregnancy (progesterone).
- Misoprostol (prostaglandin) induces contractions and expulsion of the pregnancy.

THE PROCESS

1. Mifepristone tablet taken on (day)..... at (time) .....

WHAT CAN HAPPEN AFTER MIFEPRISTONE INTAKE?

- You will most probably not feel any difference until you take the second drug.
- In most cases, you can perform your usual activities.
- If you vomit within 1.5 hours following drug intake, contact your physician to determine whether another drug dose is necessary.
- On the evening of the following day, some women may experience period-like bleeding, feel tired, and have some pain.
- On rare occasions, there is heavy bleeding with blood clots and cramping.
- It is possible to expel the pregnancy before misoprostol (prostaglandin) intake (happens in 3% of the cases).

ⓘ bleeding does not indicate that the pregnancy has been terminated, regardless of how heavy it may be.

So, it is essential to take the misoprostol (prostaglandin) 24 to 48 hours later according to approved schedule.

2. Misoprostol (prostaglandin) taken on (day)..... at (time) .....

WHAT CAN HAPPEN AFTER PROSTAGLANDIN INTAKE?

- After misoprostol (prostaglandin) intake, you have no special precautions to take.
- If you have the procedure at home, it is preferable to remain comfortable and to have somebody with you.
- The misoprostol (prostaglandin) induces uterine contractions and pain similar to or stronger than menstrual pain.
  - > **Do not hesitate to take the pain killers that were prescribed to you.**
- You may experience nausea, vomiting, and diarrhoea.
- If you vomit within 1.5 hours following drug intake, contact your physician to determine whether another drug dose is necessary.
- Expulsion of the pregnancy is associated with bleeding that is often heavier than menstrual bleeding and contains blood clots.

- The gestational sac is sometimes visible in the form of a gelatinous white ball 1 to 3 centimetres long.
- Bleeding can happen very quickly after prostaglandin intake, but it may also happen later, sometimes only the next day:
  - > In 60% of cases, expulsion will occur within 4 hours of misoprostol (prostaglandin) intake.
  - > In other cases, expulsion will happen within 24 to 72 hours of misoprostol (prostaglandin) intake.
- Bleeding lasts about 4 days and is generally more abundant than during your period.
  - > If you are still bleeding 3 weeks after misoprostol (prostaglandin) intake, you should contact your physician.

IF AT ANY TIME you are worried or if the following occurs:

1. Fever (lasting longer than 24 hours),
2. Pain that persists despite taking analgesics,
3. Significant and persistent blood loss (use of more than 2 sanitary pads per hour for 2 hours), or
4. Faintness

PLEASE CONTACT:

your doctor..... at the.....

department of the ..... hospital at .....

ⓘ After an abortion, fertility resumes immediately.

A pregnancy can occur with your first sexual intercourse after the abortion.

> **It is advised to start contraception immediately.**

If you choose the contraceptive pill, start the pack on .....

FOLLOW-UP

3. Follow-up examination on ..... at .....

- The follow-up examination must take place 1 to 3 weeks after mifepristone intake.
- The physician will verify that the pregnancy has ended (the failure rate for the method is below 5%) and make sure there are no complications.
- The efficacy of the method is generally verified by pregnancy test in urine or blood (β-hCG) or ultrasound examination.

5. Example of patient consent form

PATIENT CONSENT FORM

CONSENT

The undersigned ..... hereby,

1. confirm that it is **my free decision** to terminate the pregnancy,
2. will do so **according to the law**
3. state that I am aware that abortion can be performed by medical or surgical method and that **I have chosen the abortion**,
4. acknowledge having **fully read and understood the document given to me**.
5. and certify that **someone clearly explained the contraindications and the side effects** to me.

I am aware that:

- Medical abortion consists of **taking 1 mifepristone tablet.**
- This dose must be followed by 24 to 48 hours later by the administration of misoprostol (prostaglandin).
- The follow-up consultation is essential to verify expulsion of the pregnancy and takes place 1 to 3 weeks after mifepristone intake.

I AM FULLY AWARE THIS METHOD IS HIGHLY EFFECTIVE, BUT NOT 100%

Therefore, in the rare event that the treatment is not completely successful:

- A repeated medical abortion or a surgical procedure may be required to complete the termination.
- Should I decide to carry my pregnancy to term, I will inform the physician so that I can receive prenatal medical supervision. Indeed, there is no guarantee as to the risk for the foetus.

The patient took mifepristone tablets with the HCP	
Patient	Physician
Complete name:	Date: .....
Date:	Time of medication: .....
Patient's signature:	Physician's signature and stamp:
The patient took mifepristone at home	
Patient	Physician
Complete name:	Date: .....
The patient certifies on her honour that the VEMA is intended for her, and that she undertakes to follow the physician's instructions.	Physician's signature and stamp:
Date:	
Patient's signature:	

VEMA CLINICAL CASES

For illustrative and educational discussion only – not clinical recommendations.

CASE 1 CASE OF SUCCESSFUL VEMA

PATIENT PRESENTATION

Pregnancy:

- Positive pregnancy test
- Gestational length (LMP): 5 weeks + 0 days

Risk factors:
No significant risk factors for ectopic pregnancy

Clinical symptoms:
No pain, no bleeding

Ultrasound:
Empty uterus > pregnancy of unknown location (PUL)

TREATMENT PROTOCOL:

Day 0 (baseline):

- Serum β-hCG = 987 IU/L
- 200 mg mifepristone taken orally

Day 2:
800 µg misoprostol administered sublingually 30 hours later

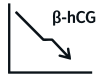
Normal bleeding for 5 days

Day 7:
Repeat serum β-hCG = 183 IU/L, a drop of 81% from baseline

Ultrasound:
Empty uterus > pregnancy of unknown location (PUL)

OUTCOME:

Success of treatment, abortion completed



KEY DECISION FACTOR:

The 81% drop in β-hCG level between baseline and day 7

CASE 2 CASE OF UNSUCCESSFUL VEMA

PATIENT PRESENTATION

Pregnancy:

- Positive urine pregnancy test
- Gestational length (LMP): 4 weeks + 4 days

Risk factors:
No significant risk factors for ectopic pregnancy

Clinical symptoms:
Tender breast, nausea, no pain, no bleeding

Ultrasound:
Empty uterus > PUL

TREATMENT PROTOCOL:

Day 0 (baseline):

- Serum β-hCG = 745 IU/L
- 200 mg mifepristone taken orally

Day 2:
800 µg misoprostol administered vaginally 45 hours later additional 400 µg misoprostol after 4 hours because uterine evacuation appeared incomplete

Light bleeding

Day 7:

- Repeat serum β-hCG = 470 IU/L > EP suspicion
- Transvaginal ultrasound: incomplete abortion

OUTCOME:

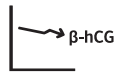
Treatment failure, incomplete abortion

> patient decides to repeat medical procedure

mifepristone + misoprostol

KEY DECISION FACTOR:

Rather high β-hCG level after 7 days despite 37% decrease



CASE 3 CASE OF ECTOPIC PREGNANCY

PATIENT PRESENTATION

Pregnancy:

- Positive urine pregnancy test
- Gestational length (LMP): 4 weeks + 5 days

Risk factors:
Previous C-section, 41 years old

Clinical symptoms:
No pain, no bleeding

Ultrasound:
Empty uterus > PUL

TREATMENT PROTOCOL:

Day 0 (baseline):

- Serum β-hCG = 200 IU/L
- 200 mg mifepristone taken orally

Day 2:
800 µg misoprostol administered vaginally 45 hours later + additional 400 µg misoprostol after 4 hours

Mild abdominal pain

Day 7:

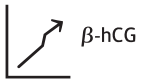
- Repeat serum β-hCG = 900 IU/L > EP suspicion
- Transvaginal ultrasound: ectopic pregnancy (fallopian tube implantation)

Ultrasound:
Empty uterus > pregnancy of unknown location (PUL)

OUTCOME:

VEMA procedure stopped

> Methotrexate treatment



KEY DECISION FACTOR:

High β-hCG level after 7 days and mild abdominal pain

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VERY EARLY MEDICAL ABORTION
A PRACTICAL GUIDE FOR HEALTHCARE PROFESSIONALS

This practical guide is intended for all healthcare professionals involved in abortion care: gynaecologists, general practitioners, midwives, nurses, social workers, and others.

Very Early Medical Abortion (VEMA) refers to medical abortion performed before ultrasound can confirm the location of the pregnancy, usually before 6 weeks of amenorrhea. Increasing women present at this stage, yet many providers still delay treatment for fear of missing an ectopic pregnancy. The evidence shows the opposite: VEMA is as safe and effective as medical abortion for a confirmed intrauterine pregnancy, while also enabling earlier detection and management of ectopic pregnancy.

This guide includes the following chapters:

- Introduction (trends, pregnancy location before 6 weeks…)
- General information on VEMA
- Management of VEMA (pre-abortion care, treatment, follow-up)
- VEMA resources (decision tree, protocol, patient information and consent forms)
- Clinical cases.

Tables, figures, boxes, take-home messages and caution points make for easy reading and a field book for everyday use.

The authors, Christian FIALA, Aubert AGOSTINI, Teresa BOMBAS, Sharon CAMERON, Mary FAVIER, Kristina GEMZELL-DANIELSSON, Sandra KROEZE, Marek LUBUSKY, and Mirella PARACHINI, are gynaecologists/obstetricians and general practitioners. They work in the field of abortion care in their country (Austria, France, Portugal, the United Kingdom, Ireland, Sweden, the Netherlands, the Czech Republic, and Italy, respectively). Most of them are members of the International Federation of Abortion and Contraception Professionals (FIAPAC). With this practical guide they want to help all those involved in abortion to offer treatment without unnecessary delay, effectively and safely, with full respect for the woman who requests help to end her pregnancy as early as she has decided to.

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