

## Endometrial ablation in the Outpatient Setting\*

S. MARTINEZ<sup>1</sup>, A. MEGIA<sup>1</sup>, C. ALVAREZ<sup>2</sup>

<sup>1</sup>Department of Obstetrics and Gynaecology, Hospital Universitario Torrecárdenas, Almería, Spain; <sup>2</sup>Department of Obstetrics and Gynaecology, Hospital Universitario La Paz, Madrid, Spain.

\*This article was not peer reviewed by Facts, Views and Vision. The lead author was commissioned by Hologic.

Correspondence at: Sonia Martinez Morales. E-mail: smartinezm26@gmail.com

### Abstract

**Endometrial ablation techniques are a minimally invasive, safe and satisfying option for heavy menstrual bleeding (HMB) treatment. The development of new faster devices with smaller diameters has made it possible to perform these procedures in office and outpatient setting under local anaesthesia with high patient satisfaction, fewer complications, shorter hospital stays and quicker recovery time reducing costs. In this article we analyse the management protocols for endometrial ablation in the outpatient setting to provide the best treatment option. A bibliographic search from 2013 in the Medline, Embase, PubMed and Cochrane Library databases was carried out with the keywords: endometrial ablation, outpatient, local anaesthesia, fundal block.**

**Most studies reviewed show that 2nd generation endometrial ablation techniques are safer, faster, and equally effective for treatment of HMB than 1st generation ones and can be safe and feasible under local anaesthesia in office and outpatient setting. The combination of either intra- or paracervical anaesthesia with intrauterine cornual or fundal block is more effective at reducing pain. Levobupivacaine and Ropivacaine are the anaesthetics of choice due to their potency duration with low adverse effects.**

**Women should be encouraged to play an active role in selecting the type of surgery the setting and the model of care, based on a complete information, their personal preferences and expectations.**

**Some aspects such as age, intention to become pregnant, other symptoms or comorbidities and failure of previous treatments will help to make the best choice.**

**Keywords:** Endometrial ablation, local anaesthesia, fundal block, heavy menstrual bleeding, outpatient setting.

### Introduction

Heavy menstrual bleeding (HMB) is an important health problem for women of reproductive age because it can affect physical health and quality of life. It represents about 30% of total gynaecological visits and entails important costs and loss of productivity (Miller et al., 2015; Fraser et al., 2015))

First line treatment includes progestogen-releasing intrauterine systems (Pg-IUS or LNG-IUS) which is considered the best and secure option to reduce menstrual blood loss, followed by antifibrinolytics, non-steroidal anti-inflammatory drugs (NSAIDs), long-acting progestogens, and combined hormonal contraceptives. Surgery is recommended as a second-line treatment of heavy menstrual bleeding (HMB). Although hysterectomy

is a definitive treatment for HMB with higher satisfaction rates, preferably minimally invasive hysterectomy, endometrial resection/ablation (ER/EA) techniques represent a less invasive alternative, especially for those patients who want to preserve their uterus. They require a shorter hospital stay, allow a quicker return to normal activity compared with hysterectomy and have fewer postoperative complications (Bofill Rodríguez et al., 2022; NICE, 2018).

Over the years, numerous devices have been developed for performing endometrial ablation that allow the procedure to be carried out under local anaesthesia since they do not require cervical dilation due to their smaller diameter. This has made it possible to safely perform in-office ablation, improving patient satisfaction and reducing costs.

Most of the publications that analyse endometrial ablation under local anaesthesia focus mainly on pain tolerance, patient satisfaction and adverse effects, however they do not describe the infiltration technique, or the anaesthetics used in detail.

Performing endometrial ablation under local anaesthesia using potent, long-acting drugs not only provide a good pain control during the procedure, but also effective analgesia during the immediate postoperative period that can last up to 8 hours, so that the need of oral analgesic medication is significantly reduced.

It is important to improve training in local anaesthesia for ablation so that we can offer this option to our patients safely and effectively.

## Objectives

In this section we will summarise the outpatient management protocols for endometrial ablation in the outpatient setting, the premedication administered, the anaesthetic techniques, the drugs used and their differences and the medication in the postoperative period. In addition to knowing the most important aspects for the selection of patients, we must provide them with the relevant information so that they can choose the most appropriate type of treatment for their HMB.

## Methods

A bibliographic search of publications on ambulatory endometrial ablation from 2013 onwards was carried out in the Medline, Embase, PubMed and Cochrane Library databases. The keywords used were endometrial ablation, outpatient setting, local anaesthesia, and fundal block.

The type of studies selected were Cochrane reviews, controlled clinical trials, systematic reviews, randomized controlled trials and metaanalyses. Articles were selected based on the content and the quality of the study.

## Results

### *Selection of patients*

Endometrial ablation is indicated in women of premenopausal age with heavy menstrual bleeding of benign aetiology, with normal cavity less than 10cm in length, without uterine abnormalities or fibroids greater than 3 cm in diameter in whom medical treatment has failed or is contraindicated. Prior classic caesarean scar or transmural myomectomy may increase the risk of damage to surrounding structures, so in these cases it may be best to perform resectoscopic endometrial ablation.

Active pelvic infections should also be excluded.

The endometrium of all candidates for endometrial ablation must be sampled, and histopathologic results should be reviewed before the procedure. The possibility of pregnancy cannot be excluded after an endometrial ablation, therefore women undergoing this procedure should be counselled to use appropriate contraception (Vitale et al., 2023; Reinders et al., 2016). Patients should be given choice for endometrial ablation either with or without general anaesthesia in the office or in the operating room. For women with increased surgical risks or with contraindications for medical treatment due to pre-existing comorbidities, endometrial ablation may be a minimally invasive therapeutic option for the treatment of heavy menstrual bleeding (Vitale, 2023).

For outpatient/office procedures patient consent is essential, so we must inform about aspects such as pre-medication and type of anaesthesia that will be administered, they must know that a certain degree of discomfort is normal, for which the necessary medication will be administered. They must also be informed in advance about the estimated time of the procedure and the stay in the hospital until discharge as well as possible course of the postoperative period.

A thorough medical evaluation is also necessary. Patients with significant or poorly controlled pathologies such as heart disease, cerebrovascular disease, metabolic disease, uncontrolled hypertension, severe anaemia, respiratory disease, sepsis, gastrointestinal insufficiency, morbid obesity, toxic habits that may interfere with the medication administered and with a known or expected difficult airway should be excluded from “in office” procedures. Vital signs must be normal, and they must have a patent nasal airway and be free of respiratory tract infection. Patients with significant learning difficulties or severe mental illness are not candidates for procedures under local anaesthesia in an outpatient setting. Patients must be accompanied by a person who can ensure transport home and provide home care after discharge and can detect possible complications. The distance to the hospital should be less than an hour.

### *Surgical intervention*

#### *Type of procedure*

Endometrial resection and endometrial ablation are effective, minimally invasive and safe procedures that destroy the endometrium by entering the uterine cavity directly through the cervix. They are usually classified into two groups:

1st generation techniques or resectoscopic endometrial ablation or endometrial resection

(REA/ER), require direct visualisation of the uterine cavity through a surgical hysteroscope and use different forms of energy such as monopolar or bipolar electrocoagulation with rollerball, transcervical endometrial resection (TCRE) with a loop or vaporisation with a specific device.

2nd generation techniques or non-resectoscopic endometrial ablation (NREA/EA) do not require direct visualisation or fluid distension of the uterine cavity. They can use different types of energy such as microwaves, hydrothermal ablation, bipolar energy or thermal balloon.

REA requires larger diameter instruments and is performed in the operating room under general or locoregional anaesthesia but can be done on ambulatory basis.

NREA uses thinner instruments, usually does not require cervical dilation and can be carried out either under general or loco-regional anaesthesia in the operating room or in office setting under local anaesthesia.

Ablation technologies are continuously improving with smaller and more rapid ablative devices (e.g., NovaSure V5, LiNA Librata, MiniTouch) (De Silva et al., 2021).

However, there are still many hospitals where new 2nd generation ablation techniques are not available.

#### *Advantages and disadvantages of endometrial resection/ablation techniques*

Second-generation techniques of EA are safer, quicker, and equally effective when compared with first-generation devices for treatment of HMB, furthermore, the potential for EA to be performed under local anaesthesia offers a considerable advantage. Satisfaction rates and reduction in HMB are similar with both approaches. Second-generation endometrial ablation should be considered for women with a normal uterus and HMB who are not planning a present or future pregnancy (Bofill et al., 2019).

When second generation technologies were compared, no significant differences were found in pain scores between radiofrequency ablation (with NovaSure) and thermal balloon ablation (with either Thermachoice III or Thermablate). Gupta et al reported lower anaesthetic requirements for cryoablation with Cerene compared with hyperthermic endometrial ablation (Gupta et al., 2022).

Time of ablation was shorter for NovaSure and Thermablate compared with Thermachoice III.

NovaSure also had better tolerance for the procedure, significantly higher rates of amenorrhoea after 12 months and more patients were completely satisfied when compared with Thermablate.

The improvement of bleeding and dysmenorrhoea was higher although non-significant for NovaSure compared with Thermablate (De Silva et al., 2021).

Pretreatment is needed before non resectoscopic endometrial ablation except for bipolar radiofrequency. NovaSure has a built-in impedance system which calculates the endometrial thickness and the amount of energy to apply in each case.

The treatment usually applied is GnRH agonists, which entails an extra cost for procedures, although combined oral contraceptives, patch, ring, or progestogens can also be used. Another option for those patients who do not want hormonal treatment or have a contraindication for it, is to perform the procedure before the 10th day of the cycle.

#### *Setting*

First generation endometrial resection and ablation are usually performed in the operating room involving more need for staff and greater use of facilities, since after the procedure the patient will also require a stay in the recovery unit before discharge, however second-generation procedures can be done using local anaesthesia in many cases in an office setting, improving patient satisfaction, with less anaesthetic complications, shorter hospital stays and quicker recovery time. This increases efficiency and reduces overall healthcare costs (Ayesha et al., 2020).

A number of trials described the use of nonresectoscopic endometrial ablation devices with local anaesthesia and included the use of parenteral conscious sedation, which precludes these procedures in most office environments.

#### *Analgesia pre- and post-procedure and follow up*

Analgesia prior to the ablation and after the discharge is recommended because it reduces pain during the procedure and in the postoperative period due to the release of prostaglandins, mainly PGF<sub>2α</sub>, after cervical and endometrial manipulation. Published reports described administration of oral analgesics one hour before the procedure; NSAIDs (Diclofenac 50 mg or Naproxen 500mg ) and Paracetamol 1g eventually associated to Dihydrocodeine 20-40mg and an antiemetic (cyclizine, 50 mg orally) (Kumar et al., 2016; Reinders et al., 2020). After the ablation patients were advised to use paracetamol 1000 mg every six hours and naproxen 500 mg every 12 hours for 1–2 days (depending on pain) or Tramadol 100mg and an antiemetic in case of contraindication for NSAIDs (Kumar et al., 2016; Reinders et al., 2020).

Pain experienced should be reported using a visual analogue scale. Specific questionnaires can be useful to evaluate acceptability of the procedures.

### Local anaesthesia technique

Infiltration of the uterus with local anaesthesia reduces pain both during endometrial ablation and in the immediate postoperative period, therefore, this is the most valuable tool for pain control in outpatient procedures. Unlike general anaesthesia, the application of local anaesthesia has the advantage that the analgesic effect can remain for several hours depending on the drug used, this allows the patient to leave the hospital on her own and does not require oral analgesia in the immediate postoperative period. It also makes the procedure more satisfactory for the patient.

There is no standard protocol for the application of local anaesthesia and the type of anaesthetics used.

Direct cervical block (DCB) paracervical or intracervical are the most commonly used methods of local anaesthesia.

Paracervical block (PCB) involves several injections into the cervix at the level of the vaginal fornices, whereas intracervical block (ICB) involves injections directly into the cervix, but none of these techniques can provide anaesthesia to the upper part of the uterus because its innervation comes from a double pathway. The cervix and the lower half of the uterus is primarily innervated from inferior hypogastric plexus that forms the uterovaginal plexus, largely deriving from the parasympathetic sacral S2–4 nerve roots, whereas the upper half of the uterus is innervated from the thoracic nerves, deriving from the sympathetic fibres of the superior hypogastric plexus T8-T10 and L1 roots. These latter nerve fibres enter the uterus along the infundibulopelvic ligament and the path of the ovarian arteries.

The combination of either intra- or paracervical anaesthesia with intrauterine cornual block is more effective at reducing pain compared with intra- or paracervical anaesthesia alone and it is a safe approach to perform endometrial ablation under local anaesthesia (Figures 1,2 and 3) (Reinders et al., 2020; Kumar et al., 2016).

The guidelines for the application of local anaesthesia for endometrial ablation vary among different authors and, in many cases, the publications on endometrial ablation in patients without admission are difficult to compare because they talk about local anaesthesia but do not specify which drug was used or at what concentrations, which could lead to large variations in the assessment of pain during ablation, as well as in the first hours after the procedure, depending on the potency and duration of effect of the anaesthetic used (Table I).

Further paracervical and fundal block protocols for performing endometrial ablation can be found

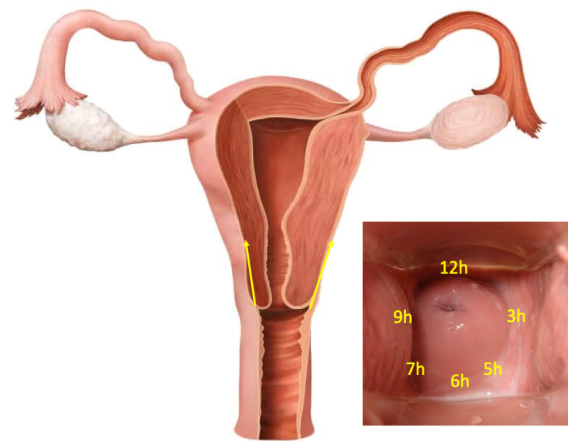


Figure 1: Paracervical block.

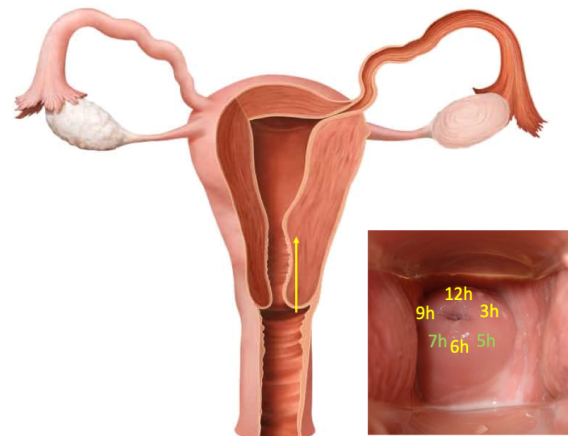


Figure 2: Intracervical block.

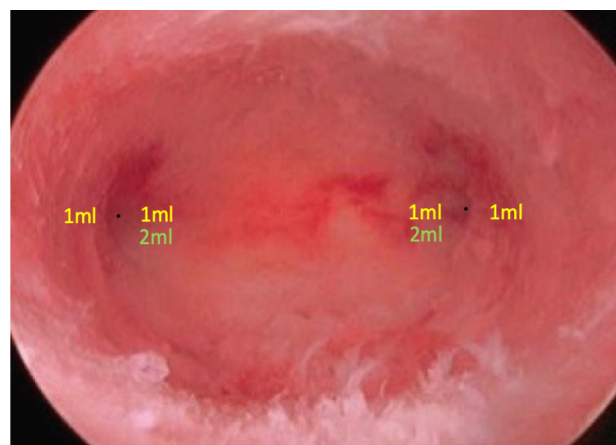


Figure 3: Intrauterine cornual (fundal) block.

using the following link: <https://www.bsge.org.uk/wp-content/uploads/2021/06/NovaSure-LA-Protocol-Booklet.pdf>. An education video of fundal block can be found via the following link:

<https://hologic.box.com/s/5m2281l86ew1igqtqs9adtij90igph80>

Local anaesthetics can be classified in two groups:

1.- Ester linked: Procaine, Tetracaine, Benzocaine and Cocaine

They are hydrolysed by plasma cholinesterase (very short half-life), are less stable, and produce allergies more frequently. Their use is currently restricted to topical application, especially on mucous membranes.

2.- Amide linked: Lidocaine, Prilocaine, Mepivacaine, Bupivacaine, Ropivacaine, Articaine and Dibucaine.

They are more stable because they have hepatic metabolism and cause fewer allergies. They have a stronger effect at low concentrations due to their greater lipid solubility and diffuse more rapidly.

Mepivacaine or Lidocaine are the most widely used amide-type anaesthetics for local infiltration, their effect lasts 2-3h for Mepivacaine and 1-2h for lidocaine, and their potency is strong enough to control cervical pain during diagnostic hysteroscopy or short surgeries.

For longer procedures or those that are expected to be more painful, the most recommended anaesthetics are Bupivacaine and Ropivacaine since, being more lipid soluble, they are more powerful, and their effect lasts 6-8h in the case of Bupivacaine and 4-6h for Ropivacaine.

Another important factor is toxicity that depends directly on the power of the anaesthetic.

Levo forms produce less toxicity than dextro forms.

There are two state-of-the-art anaesthetics marketed entirely in levo form: Levobupivacaine (levo form of bupivacaine) and Ropivacaine (which is 100% levo form). If we compare them, we can see that levobupivacaine has less neuro-cardiotoxicity than bupivacaine with identical potency.

Levobupivacaine has a higher potency than ropivacaine with equivalent safety as both are L-enantiomers.

Therefore, Levobupivacaine will be the anaesthetic of choice when we need power and duration of effect, as it also provides us with safety and less toxicity (Butterworth et al., 2020).

In the next table we can see the potency and duration of action of the different amide-type local anaesthetics (Table II).

### Toxicity

It is important to be aware of the possible adverse effects of local anaesthetics, especially most potent drugs often used for endometrial ablation.

Local anaesthetics may cause both systemic and local toxicity. Most of the side effects are caused by overdosing, usually by accidental intravenous injection, toxicity occurs at two levels:

#### Central nervous system (CNS) toxicity

The CNS is more sensitive than the myocardium, therefore neurological symptoms will occur earlier. This is the most common feature of toxicity (68%–77%), primarily in the form of seizures.

Early manifestations are perioral paraesthesia, confusion, audio– visual disturbances, dysgeusia (metallic taste), agitation, or reduced level of consciousness.

#### Cardiovascular system (CVS) toxicity

Dysrhythmias, conduction deficits, hypotension, and eventually cardiac arrest – most commonly of an asystolic nature – may be seen. Toxicity events most frequently occur immediately following injection of local anaesthetic.

To prevent systemic toxicity, it is very important to take the following precautions:

- Never exceed the maximum recommended dose in mg/kg.

**Table I.** — Drugs and doses for paracervical and fundal block.

Authors	Drugs and doses		
Reinders et al., 2020	Paracervical block	Ropivacaine 0,2% 10ml x 4	3 and 9 o'clock and in both uterosacral ligaments (a total of 40 ml)
	Hysteroscopic intrauterine fundal block	Ropivacaine 0,2% 1ml x 4	in the myometrium of the fundus: 1 ml on either side of the midline and 1 ml medial to both tubal ostia
Chene et al., 2020	Paracervical block	Ropivacaine 0,2% 10ml x 4	2 , 4, 8 and 10 o'clock (a total of 40 ml)
	Hysteroscopic intrauterine fundal block	Ropivacaine 0,2% 2ml x 4	3-4 fundal injections separated 15-20mm
Kumar et al., 2016	Paracervical block	Mepivacaine 3% 6,6ml x 6	Infiltrating deep to the cervical isthmus level at 12, 3, 5, 6, 7, and 9 o'clock positions
	Hysteroscopic intrauterine fundal block	3% Mepivacaine (fast acting) 1ml + 0.5% Bupivacaine (long acting) 1ml	One injection medial to each tubal ostium
Skensved, 2011	Paracervical block	0.2% of Ropivacaine 10ml x 4	Injections at 3, 5, 7 and 9 o'clock
	Hysteroscopic intrauterine fundal block	Prilocaine 30mg / Felypressin 0.54 µg per ml x2	Medial to each of the tubal ostia, and 1 ml on either side of the midline of the fundus

**Table II.** — Potency and duration of action for amide local anaesthetics.

Anaesthetic	Relative potency	Onset of action	Toxicity	Duration (h)	Maximum dose mg/kg	
					without Epinephrine	With Epinephrine
L-Bupivacaine	6	8 min	3	6-8	3	4
Bupivacaine	6	8 min	4	6-8	2	2.5
Ropivacaine	5	8 min	4	4-6	3	3.5
Lidocaine	1	5 min	1	1-2	4.5	7
Mepivacaine	1	3 min	1	2-3	5	7

- Avoid intravenous administration, always aspirate before injecting the local anaesthetic, verifying that a vessel has not been punctured (which would be evidenced by the presence of blood in the syringe, in this case go back and aspirate again).
- Ask about allergies to any medication.
- Expect latency time of 10-15 minutes
- Always have cardiopulmonary resuscitation material and medication available to treat eventual seizures, hypotension, bradycardia, arrhythmias and cardiorespiratory arrest (El-Boghdadly et al., 2018).

### Counselling

Women should be encouraged to play an active role in selecting the type of surgery, the setting and model of care for the endometrial ablation, based on a complete information.

Many women may prefer a surgical option as first-line management, as they decline hormonal treatment.

The best treatment will depend on the woman's age, her intention to become pregnant, the presence of other symptoms or comorbidities, failure of previous treatments and her personal views and preferences (Bofill et al., 2022; NICE, 2018)

Some of the questions that may be raised during the preoperative counselling and may influence the outcomes, differences among devices or recovery time are listed in the table below (Table III).

### Conclusion

- Non resectoscopic endometrial ablation is a less invasive option than hysterectomy for HMB treatment and should be offered as an alternative for uterus sparing.

- Endometrial ablation is a feasible procedure that can be performed safely under local anaesthesia with high acceptability and effectiveness.

- Second generation procedures can be done in the office setting improving patients' satisfaction,

**Table III.** — Factors to consider when advising the best procedure (Daniels et al., 2012; Bofill et al., 2022; Reinders et al., 2022).

FACTOR	IMPACT
Age	Better results in reduction of bleeding after age 45 years
Satisfaction	Rates over 80% NREA may have higher satisfaction rates than LNG-IUS
Outcome of menstrual blood loss	Amenorrhoea rate depends on device used, most likely normalisation of menstrual flow, not necessarily amenorrhoea
Type of NREA	<ul style="list-style-type: none"> <li>* REA and NREA may be better than LNG-IUS at reducing blood loss</li> <li>* Microwave NREA is better than REA for reducing blood loss</li> <li>* Bipolar radiofrequency and microwave ablation devices are more effective than thermal balloon and free fluid ablation for treating HMB</li> <li>* Bipolar radiofrequency is probably the best option for achieving amenorrhoea</li> <li>* Bipolar radiofrequency has lower rates of requirement of further surgery</li> </ul>
Predictors of endometrial ablation failure	Multiparity, obesity, and previous dysmenorrhoea
Returning to normal activities (time estimated)	5-7 days
Necessity of pain medication (time estimated)	2 days
Patients with increased surgical risks	Minimally invasive therapeutic option with lower risks than hysterectomy
LNG-IUS: Levonorgestrel – Intrauterine system, NREA: Non-resectoscopic endometrial ablation, REA: Resectoscopic endometrial ablation, HMB: Heavy menstrual bleeding.	

with fewer anaesthetic complications, shorter hospital stay and quicker recovery time so patients should be given the choice for this option when choosing the procedure.

- The election of the type of device used depends on the availability and the decision agreed with the patient based on her expectations and needs after complete information on the available options and pro and drawbacks of each one.

- Long acting and potent anaesthetics like Bupivacaine or Ropivacaine are preferred for uterine infiltration because they provide good pain control also during the first postoperative hours with low toxicity.

- The most effective infiltration technique for local anaesthesia is the combination of paracervical and fundal block.

- Women's/Patient safety must be our main objective, therefore endometrial ablation procedures must be performed in an office setting where we have available all the security measures in place to guarantee care in the event of adverse effects that, although infrequent, can be life-threatening for patients.

## References

Ajmi A, Das S. Outpatient endometrial ablation: audit of outcomes and patient satisfaction. *J Obstet Gynaecol.* 2020;40:1145-7.

Bofill Rodriguez M, Dias S, Jordan V et al. Interventions for heavy menstrual bleeding; overview of Cochrane reviews and network meta-analysis. *Cochrane Database of Systematic Reviews.* 2022;5: CD013180.

Bofill Rodriguez M, Lethaby A, Grigore M et al. Endometrial resection and ablation techniques for heavy menstrual bleeding. *Cochrane Database of Systematic Reviews.* 2019;1: CD001501.

Butterworth JF, Lahaye L. Clinical use of local anesthetics in anesthesia. Available at: <https://www.uptodate.com/contents/clinical-use-of-local-anesthetics-in-anesthesia#:~:text=Mechanism%20of%20action%20of%20local%20anesthetics%20%E2%80%94%20LAS%20reversibly%20inhibit%20nerve,anchored%20in%20the%20plasma%20membrane>

Chene G, Piana F, Cerruto E et al. Comment je fais... simplement une thermodestruction endométriale sous bloc anesthésique associé à la réalité virtuelle immersive. *Gynecol Obstet Fertil Senol.* 2020;48:703-6.

Cooper N, Ireland N. Analgesia and Anaesthesia for Hysteroscopy. In Connor M, Clark T. (Eds). *Diagnostic and Operative Hysteroscopy.* Cambridge University Press, Cambridge, United Kingdom 2020, 72-82.

Daniels JP, Middleton LJ, Champaneria R et al. (International Heavy Menstrual Bleeding IPD Meta-analysis Collaborative Group). Second generation endometrial ablation techniques for heavy menstrual bleeding: network meta-analysis. *BMJ.* 2012;344:e2564.

De Silva PM, Stevenson H, Smith PP et al. Pain and operative technologies used in office hysteroscopy: a systematic review of randomized controlled trials. *J Minim Invasive Gynecol.* 2021;28:1699-711.

El-Boghdady K, Pawa A, Chin KJ. Local anesthetic systemic toxicity: current perspectives. *Local Reg Anesth.* 2018;8:35-44.

Fraser IS, Mansour D, Breyman C et al. Prevalence of heavy menstrual bleeding and experiences of affected women in a European patient survey. *Int J Gynecol Obstet.* 2015;128:196-200.

Gupta S, Greenberg JA, Smith SE et al. 8580 Comparison of anesthetic usage with different endometrial ablation devices. *J Minim Invasive Gynecol.* 2022;29(S135).

Kumar V, Tryposkiadis K, Gupta JK. Hysteroscopic local anesthetic intrauterine cornual block in office endometrial ablation: a randomized controlled trial. *Fertil Steril.* 2016;105:474-80.

Miller JD, Lenhart GM, Bonafede MM et al. Cost effectiveness of endometrial ablation with the NovaSure® system versus other global ablation modalities and hysterectomy for treatment of abnormal uterine bleeding: US commercial and Medicaid payer perspectives. *Int J Womens Health.* 2015;7:59-73.

NICE Guideline [NG88]. Heavy Menstrual bleeding: assessment and management. Published 2007, updated 2018, last updated May 2021.

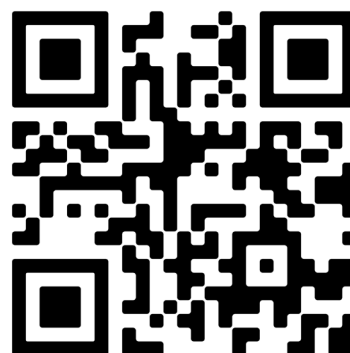
Reinders IMA, Geomini PMAJ, Leemans JC et al. Intrauterine fundal anaesthesia during endometrial ablation in the office: A randomised double-blind, non-inferiority trial. *Eur J Obstet Gynecol Reprod Biol.* 2020;254:206-11.

Skensved H. Global-local anaesthesia: combining paracervical block with intramyometrial prilocaine in the fundus significantly reduces patients' perception of pain during radio-frequency endometrial ablation (NovaSure1) in an office setting. *Gynecol Surg.* 2012;9:207-12.

Vitale SG, Della Corte L, Ciebiera M et al. Hysteroscopic endometrial ablation: from indications to instrumentation and techniques-a call to action. *Diagnostics.* 2023;13:339.

## Video scan (read QR)

<https://hologic.box.com/s/5m228l186ew1igqtqs9adtij90igph80>



[doi.org/10.52054/FVVO.15.M.099](https://doi.org/10.52054/FVVO.15.M.099)