PALM-COEIN Classification

The FIGO classification system for abnormal uterine bleeding

The International Federation of Gynecology and Obstetrics (FIGO) developed a classification system – PALM COEIN – to help categorize both structural and non-structural causes of abnormal uterine bleeding (AUB). When diagnosing heavy menstrual bleeding (HMB) these potential underlying causes should be investigated.

HMB is a symptom which can be caused by several underlying medical conditions. In clinical practice there are several treatments that are used despite not being specifically approved for HMB. The following section is intended to give an overview of what is clinical practice. Please be aware that the label of a specific product may vary from country to country.

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HELP

heavymenstrualbleeding.com

The HELP group is an international panel of independent physicians with expert interest in HMB.
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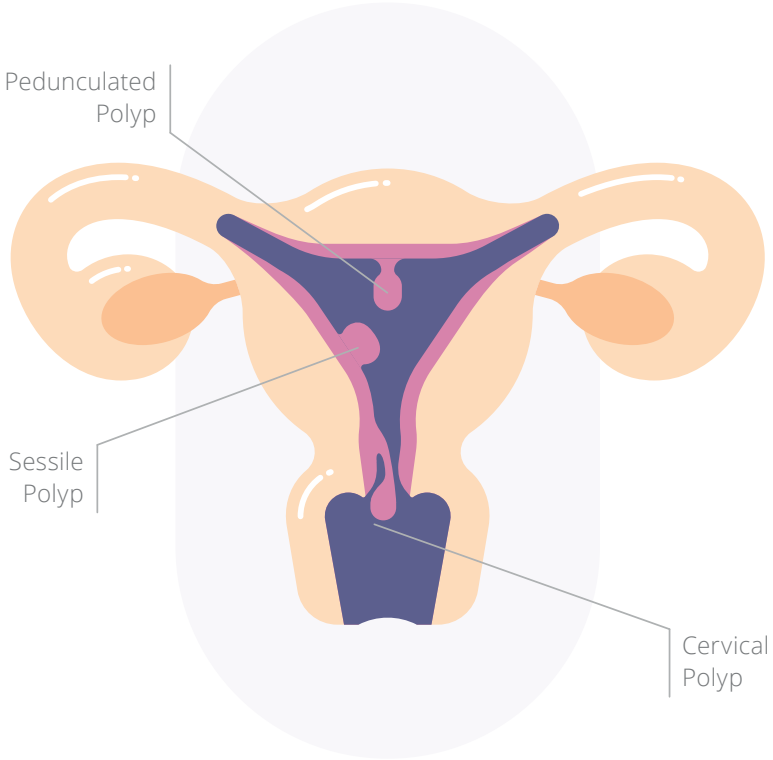
Structural Causes

Polyps



DEFINITION

- Epithelial growth consisting of a mix of vascular, glandular, fibromuscular and connective tissues.[1]

SYMPTOMS

- Asymptomatic in most women.[2]
- Abnormal Uterine Bleeding in 3.7% to 65%, depending on the studies.[3-5]
- Up to 25% may regress spontaneously, but the majority will persist beyond one year.[6,7]

DIAGNOSIS

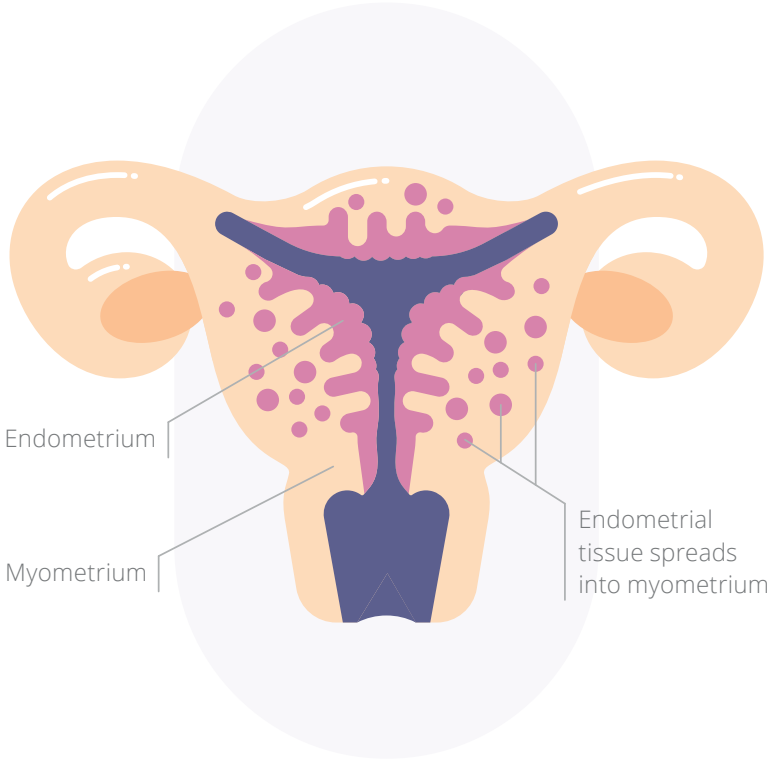
- Transvaginal ultrasound (ideally with saline infusion).[8]

TREATMENT

- Hysteroscopic polypectomy.[7]

1. Munro MG, et al. Int J Gynaecol Obstet,2011; 113, 3–13.
2. Munro M, et al. Int J Gynecol Obstet 2018;doi: 10.1002/ijgo.12666.
3. Dreisler E, et al. Ultrasound Obstet Gynecol 2009;33:102–8.
4. Preutthipan S & Herabutya Y. Fertil Steril 2005;83:705–9.
5. Whitaker L & Critchley HO. Best Pract Res Clin Obstet Gynaecol 2016;34:54–65.
6. Lieng M, et al. J Minim Invasive Gynecol 2009;16:465–71.
7. American Association of Gynecologic Laparoscopists. J Minim Invasive Gynecol 2012;19:3–10.
8. Bahamondes L & Ali M. F1000Prime Rep 2015; 7:33–7.

Adenomyosis



DEFINITION

- Abnormal presence of endometrial tissue within the myometrium (diffuse or focal).[1,2]

SYMPTOMS[2,3]

- Heavy menstrual bleeding, dysmenorrhea and pelvic pain and reduced fertility.
- Up to a third of patients are asymptomatic.

DIAGNOSIS

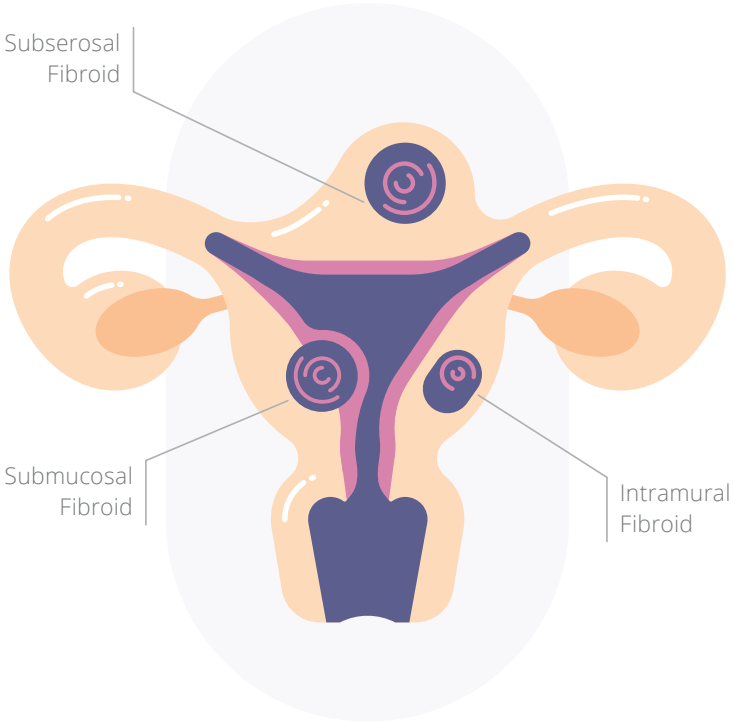
- Transvaginal ultrasound.[4]
- Magnetic resonance imaging.[5]

TREATMENT

- Medical treatment: levonorgestrel intrauterine system, oral contraceptives, gonadotropin releasing hormone (GnRH) agonists.[6]
- Surgical treatment: adenomyectomy, hysterectomy.[3,6]

1. Fedele L, et al. Fertil Steril 1992;58:94–7.
2. Levy G, et al. Diagn Interv Imaging 2013;94:3–25.
3. Abbott JA. Best Pract Res Clin Obstet Gynaecol 2017;40:68–81.
4. Munro M, et al. Int J Gynecol Obstet 2018;doi: 10.1002/ijgo.12666.
5. Dueholm M, et al. Fertil Steril 2001;76:588–94.
6. Berlanda N, et al. Current treatments for adenomyosis. In Uterine Adenomyosis, eds Habiba M & Benagiano G. Cham, Springer, 2016:169–82.

Leiomyoma



1. Stewart EA. N Engl J Med. 2015; 372(17):1646-55
2. Vilos GA, et al. J Obstet Gynaecol Can 2015;37:157–78.
3. Borah BJ, et al. Am J Obstet Gynecol 2013;209:319e1–319e20
4. Munro MG, et al. Int J Gynaecol Obstet,2011; 113, 3–13.
5. Brito L, et al. Reprod Health 2014;11:10.
6. Van den Bosch T, et al. Ultrasound Obstet Gynecol 2015;46:284–98.
7. Sparic R, et al. Int J Fertil Steril 2016;9:424–35.

DEFINITION

- Benign smooth muscle tumors of the myometrium, also known as fibroids. Uterine fibroids are the most common gynecological tumor and leading cause for hysterectomy. [1,2,3]
- Can be submucous, subserous or intramural.[4]

SYMPTOMS

- Women are often asymptomatic.[5]
- Around 25 to 50% of women have symptoms: HMB, pelvic pain or pressure.[3]
- May lead to subfertility, miscarriage and obstetric complications.[6]

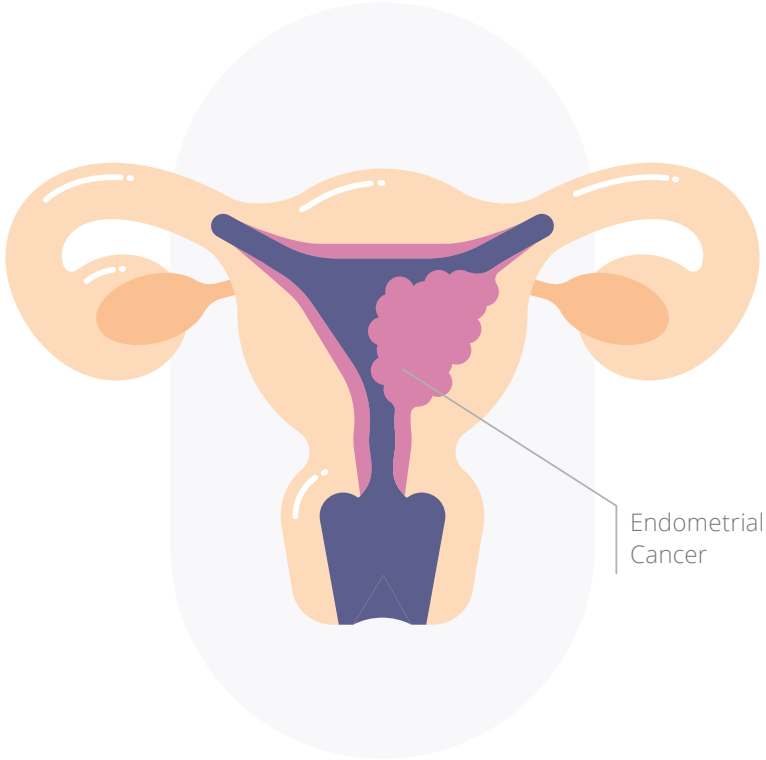
DIAGNOSIS

- Transvaginal ultrasound.[6]
- For submucosal fibroids: ultrasound (ideally with saline infusion) and hysteroscopy.[5]

TREATMENT

- Treatment should be individualized, depending on symptom severity, distortion of the uterine cavity and desire for future children.[7]
- Medical treatment: Oral contraceptives, oral progestins, levonorgestrel intrauterine system. Selective progesterone receptor modulators and GnRH analogues can be used pre surgery, to reduce fibroid size.[2]
- Minimally invasive procedures: uterine artery embolization, MRI guided focused ultrasound surgery, endometrial ablation, hysteroscopic myomectomy.[2]
- Surgical treatment: laparoscopic or abdominal myomectomy, hysterectomy[2]

Malignancy and Hyperplasia



DEFINITION

- Endometrial hyperplasia is defined as the irregular proliferation of endometrial glands with an increase in the gland to stroma ratio when compared with proliferative endometrium. When atypical cells are identified, it can progress to endometrial malignancy if left untreated.[1]

SYMPTOMS

- Abnormal uterine bleeding is the most common presentation of endometrial hyperplasia. This includes heavy menstrual bleeding, intermenstrual or irregular bleeding, postmenopausal bleeding and unscheduled bleeding on hormone replacement therapy.[1]

DIAGNOSIS

- Transvaginal ultrasound[1]
- Hysteroscopy with endometrial biopsy.[1]

TREATMENT

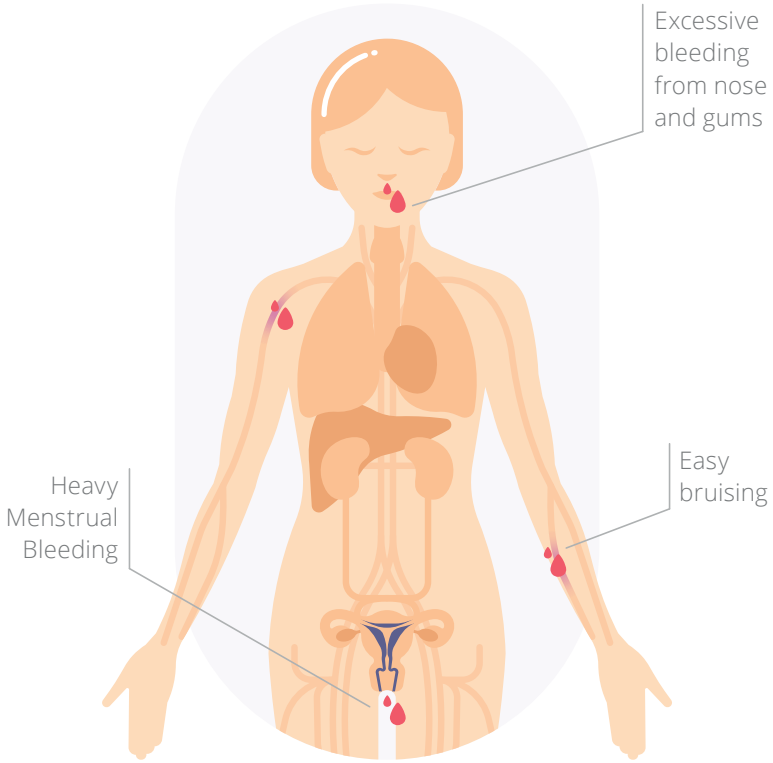
- Without atypical cells: address reversible risk factors and observation with follow-up biopsy.[1] Treatment with levonorgestrel intrauterine system or oral progestins may increase regression rates.[2]
- With atypical cells: total hysterectomy should be considered.[1]

1. Royal College of Obstetricians and Gynaecology. Available at: https://www.rcog.org.uk/globalassets/documents/guidelines/green-top-guidelines/gtg_67_endometrial_hyperplasia.pdf .

2. Gallos ID, et al. Hum Reprod 2013;28:2966–71.

Non-structural Causes

Coagulopathy



DEFINITION

- Systemic disorders of hemostasis that can contribute to heavy menstrual bleeding (i.e. hemophilia, von Willebrand disease).[1]

SYMPTOMS[2]

- Heavy menstrual bleeding since menarche
- History of hemorrhage (after delivery, during surgery or dental work), easy bruising, epistaxis, gum bleeding.
- Family history of bleeding problems.

DIAGNOSIS

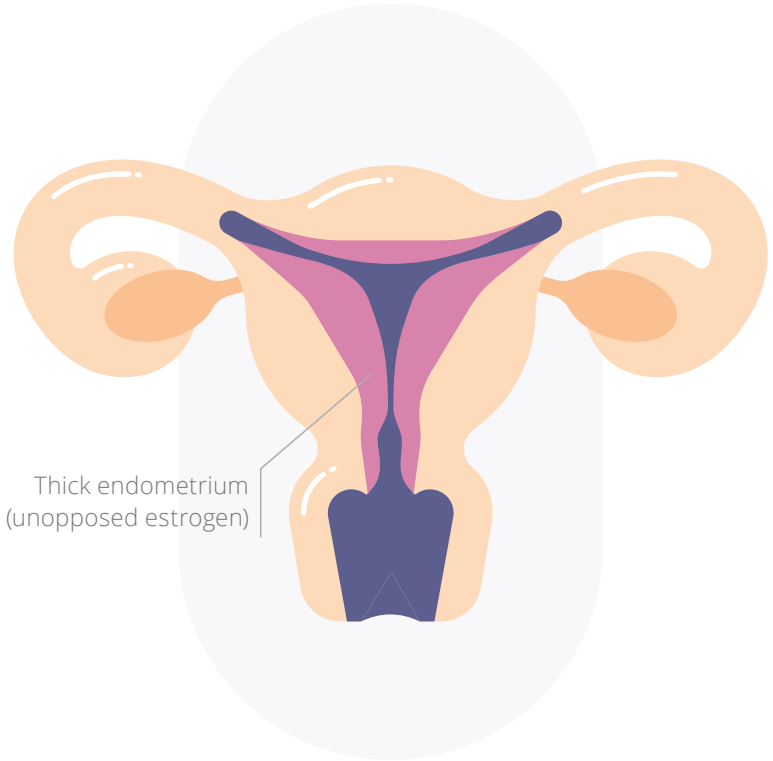
- Structured medical history can identify coagulopathy in approximately 90% of cases.[3]

TREATMENT[1]

- Multidisciplinary approach recommended.
- Treatment often involves tranexamic acid usually in combination with hormonal treatments. NSAIDs should not be prescribed.
- Surgical treatment may be required in refractory cases.

1. Bacon JL, et al. Obstet Gynecol Clin North Am 2017;44:179–93.
2. Singh S, et al. J Obstet Gynaecol Can 2013;35(5_eSuppl):S1–S28.
3. Kouides PA, et al. Fertil Steril 2005;84:1345–51.

Ovulatory dysfunction



DEFINITION
- Abnormal, irregular or absent ovulation.
- Common in the extremes of reproductive life[1]
- Causes may include polycystic ovary syndrome, obesity, anorexia, mental stress, extreme exercise.[1,2]

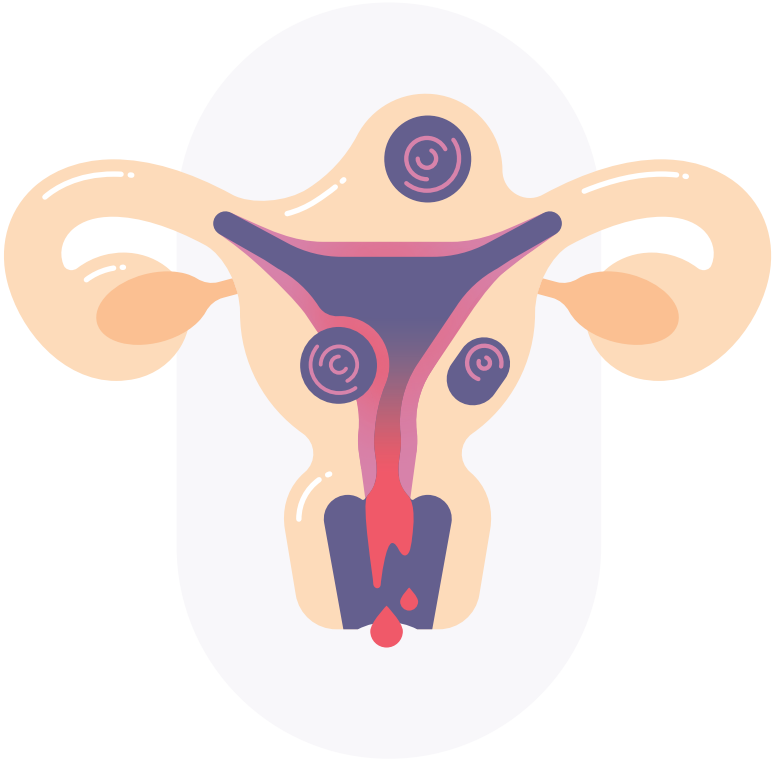
SYMPTOMS
- Menstruation is often unpredictable and irregular (presentation ranging from amenorrhea and very light bleeding to extremely heavy bleeding episodes).[1,2,3]

DIAGNOSIS
- Medical history of irregular menses,[4]
- Structural causes can be excluded by imaging and/or histopathological assessments.[2]

TREATMENT[5]
- Hormonal treatment (combined oral contraceptives, oral progestins, levonorgestrel intrauterine system).
- If a specific cause is identified (i.e. thyroid disease), treatment should be directed.
- Life style modifications if applicable (i.e. obesity).
- Other treatment options include NSAIDs and tranexamic acid.

1. Munro MG, et al. Int J Gynecol Obstet 2011;113:3–13.
2. Whitaker L & Critchley HO. Best Pract Res Clin Obstet Gynaecol 2016;34:54–65.
3. Munro et al, Int J Gynecol Obstet 2018; 1-16
4. Munro MG, et al. BJOG 2017;124:185–9.
5. Albers JR, et al. Am Fam Physician 2004;69:1915–26.

Endometrial dysfunction



DEFINITION

- Abnormal uterine bleeding caused by a primary disorder of the endometrium. Can be associated with a disruption of mechanisms regulating local endometrial hemostasis with deficiencies in local production of vasoconstrictors and increased local production of substances that promote vasodilation.[1]

SYMPTOMS

- Abnormal uterine bleeding in a woman with a structurally normal uterus, regular ovulatory cycles and no evidence of coagulopathy or other systemic disease.[1,2]

DIAGNOSIS

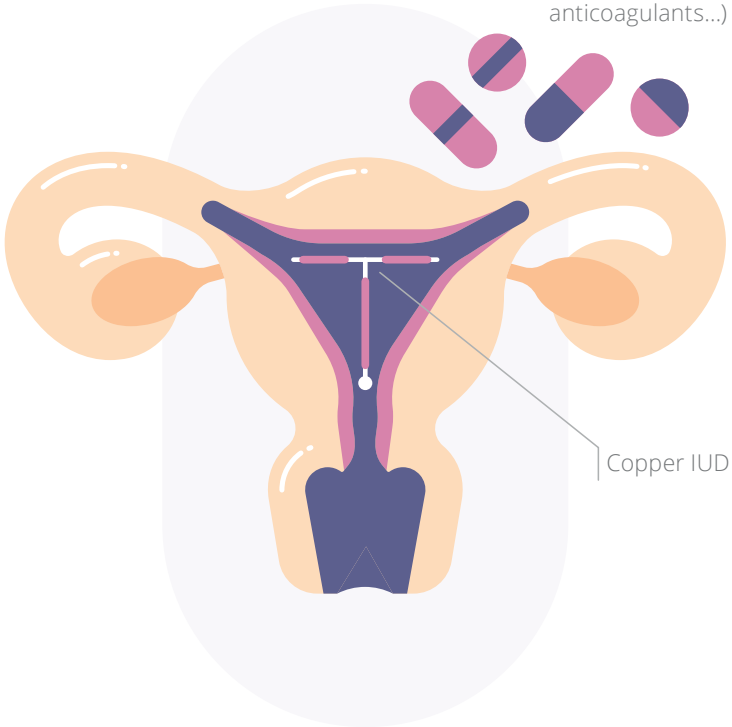
- Taking a detailed medical history and excluding other pathologies.[1,2]

TREATMENT

- There are currently no specific therapies to treat endometrial dysfunction.[2]
- Treatment options may include non-hormonal medications like non-steroidal anti-inflammatories and tranexamic acid and hormonal medications such as oral contraceptives and the levonorgestrel intrauterine system.[3]

1. Munro MG, et al. Int J Gynecol Obstet 2011;113:3–13.
2. Whitaker L & Critchley HO. Best Pract Res Clin Obstet Gynaecol 2016;34:54–65.
3. Singh S, et al. J Obstet Gynaecol Can 2013;35(5_eSuppl):S1–S28.

Iatrogenic



DEFINITION

- Abnormal uterine bleeding caused by medical interventions or devices (such as the Copper intrauterine device) or medicines that impact the endometrium, influence ovulation or interfere with clotting mechanisms.[1]

SYMPTOMS

- Heavy menstrual bleeding, breakthrough bleeding, or unscheduled endometrial bleeding that is related with the use of hormonal contraceptives, copper intrauterine devices or other medications.[1,2]

DIAGNOSIS

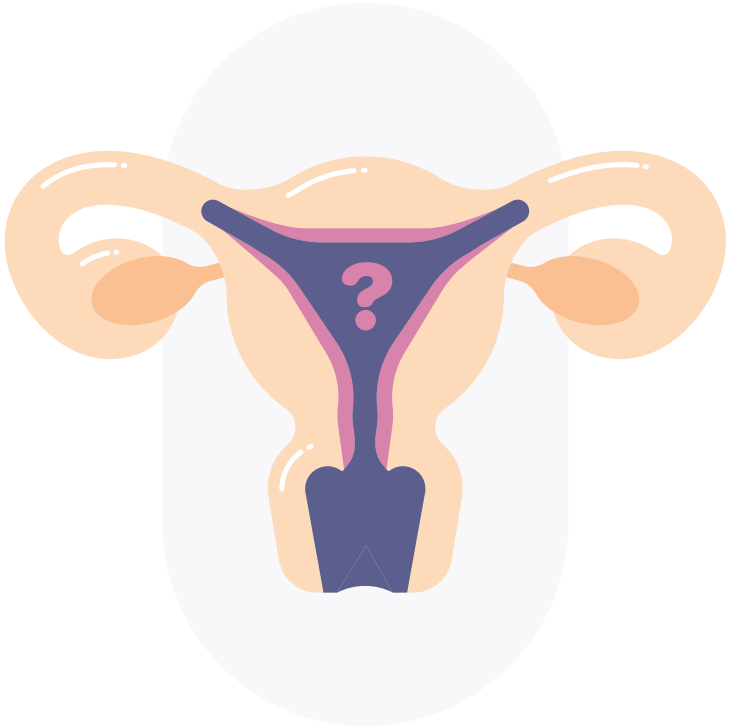
- Temporal relationship between the treatment or medication and the onset of HMB.
- A thorough medical history and gynecological examination (including transvaginal ultrasound) should be conducted to rule out other causes of bleeding.[3]

TREATMENT

- Carefully evaluate the clinical indication for the medication or device responsible, the presence of comorbidities, structural uterine changes and the need for contraception and/or fertility preservation.[3]
- Stopping treatment or finding an alternative should be considered.[3,4]

1. Munro MG, et al. Int J Gynecol Obstet 2011;113:3–13.
2. Whitaker L & Critchley HO. Best Pract Res Clin Obstet Gynaecol 2016;34:54–65.
3. Maas AH, et al. Maturitas 2015;82:355–9.
4. Faculty of Sexual and Reproductive Healthcare Clinical guidance: Problematic bleeding with hormonal contraception. https://www.fsrh.org/documents/ceuguidanceproblematicbleedinghormonalcontraception/.

Not otherwise classified



DEFINITION

- This includes cases where abnormal uterine bleeding is not related to pregnancy, structural pelvic alterations, hormonal imbalance, hormonal contraception or chronic disease.[1,2]
- Conditions might include myometrial hypertrophy and arteriovenous malformations, or uterine isthmocele related to the uterine scar from a previous cesarean section.[3,4,5]

SYMPTOMS

- Abnormal uterine bleeding in a woman in whom other causes were excluded.

DIAGNOSIS

- Exclude other potential causes of abnormal uterine bleeding: detailed patient history, gynecological examination, blood tests, transvaginal ultrasound.[1]
- Endometrial biopsy can identify a previously non diagnosed structural cause (i.e. endometrial polyps or hyperplasia).[1]

TREATMENT

- Medical treatment should be considered as a first-line option in the absence of structural abnormalities.[6,7]
- Non-hormonal treatments: NSAIDs (like mefenamic acid) and tranexamic acid.[6]
- Hormonal treatments: cyclical progestins, combined oral contraceptives and levonorgestrel intrauterine system.[6]

1. Grzechocinska B, et al. J Womens Health Issues Care 2017;6:1.
2. Kotdawala P, et al. J Mid-life Health 2013;4:16–21.
3. Munro MG, et al. BJOG 2017;124:185–9.
4. Munro MG, et al. Int J Gynaecol Obstet 2011;113:3–13.
5. Munro MG, et al. Int J Gynaecol Obstet 2018;doi: 10.1002/ijgo.12666
6. Singh S, et al. J Obstet Gynaecol Can 2013;35(5_eSuppl):S1–S28.
7. Bradley LD & Gueye NA. Am J Obstet Gynecol 2016;214:31–44.