

## Abnormal Uterine Bleeding: Revisited

**Sachin Vijay Naiknaware\***

*Grant Medical College, Mumbai, India*

**\*Corresponding Author:** Sachin Vijay Naiknaware, Grant Medical College, Mumbai, India.

**Received:** March 12, 2020; **Published:** August 05, 2020

All abnormal patterns of bleeding that may result from wide variety of causes is called as abnormal uterine bleeding is commonly caused by an-ovulation, pregnancy, uterine pathology and coagulopathies [1].

It is a common problem encountered by women of all ages and it is responsible for around 20 - 30% of visits to OPD in reproductive age groups and 69% in peri and postmenopausal age groups.

For abnormal uterine bleeding usually no specific cause is found and it is often implied that the cycle is anovulatory and abnormal uterine bleeding is a diagnosis of exclusion. In anovulatory cycles due to absence of progesterone endometrium is exposed to unopposed oestrogen, the endometrium grows without regular shedding and there is breakdown of endometrial tissue known as breakthrough bleeding [2].

An AUB is a diagnosis of exclusion and previously there was no classification or inconsistency in describing AUB and also more than one cause may exist in one patient so to solve this problem FIGO introduced a classification system known as PALM-COEN classification [3].

These PALM-COEN classification categorised the causes as structural and non-structural causes. structural causes are the ones that can be evaluated visually by imaging techniques or by histopathological methods and other nonstructural group includes the causes or entities which are not well defined by imaging modalities and includes:

- Coagulopathies.
- Ovulatory dysfunctions.
- Endocrine causes.
- Iatrogenic causes.
- Causes not specified.

Structural causes includes:

- Polyps.
- Adenomyosis.
- Leiomyoma.
- Malignancy
- Hyperplastic endometrium.

Even though it is beyond the scope of this chapter to discuss all the causes and management in details i will try to present a basic outline of causes and management of every entity in PALM-COIEN classification.

Starting with polyp as a cause of abnormal uterine bleeding, firstly we will define uterine polyp as a tissue outgrowth from endometrium or cervix that can cause abnormal uterine bleeding. It is usually a fragile growth, they are usually associated with abnormal response to oestrogen treatment.

Heavy menstrual bleeding is the most common pattern of abnormal uterine bleeding. Heavy bleeding is defined as abnormally heavy or prolonged bleeding and it is usually caused by abnormal blood clotting, disordered endometrium or disturbed hormonal regulation.

Normal menstruation requires integration of Hypothalamo-pituitary (HPO) axis with functional uterus, patent lower genital outflow tract and normal karyotyping. Any problem or disturbance of above causes abnormal or heavy uterine bleeding, common causes of which can be summarised as:

1. Hormonal imbalance.
2. Polyps either endometrial or endocervical.
3. Adenomyosis.
4. Malignancy.
5. Infections, pelvic inflammatory diseases.
6. Iatrogenic, IUCD.
7. Thyroid disorders.
8. AV Malformations which may be acquired after endometrial curettage after early pregnancy loss.

Heavy bleeding can be either anovulatory (80%) which is more common than the ovulatory (20%) causes. Puberty menorrhagia, perimenopausal bleeding and metriopatheia hemorrhagic are usually anovulatory where oestrogen levels are high with low progesterone levels [4] in ovulatory bleeding there is irregular ripening and shedding due to inadequate corpus lute function.

Diagnosis of abnormal uterine bleeding requires detailed history taking with more attention to blood flow pattern, associated pain or not, passage of clots, how many pads soaked. How many days of bleeding? Any family history of similar episode in mother or sister and physical examination for anaemia, abdominal examination to rule out mass and speculum examination is needed. Also, in history any bowel or bladder disturbances, postcoital or inter menstrual bleeding or any previous surgery or contraceptive use is needs to be asked for.

Investigation for a case of abnormal uterine bleeding includes but not limited to

1. Blood group type and CBC.
2. Coagulation profile.
3. Thyroid profile evaluation.

4. Abdominal or vaginal sonography.
5. PAP smear/colposcopy.
6. Endometrial sampling.
7. Saline infusion sonography.
8. CT SCAN/MRI SCAN/Doppler studies in selected patients.

Now we will discuss general plan of management with addition of newer modalities for the treatment of abnormal uterine bleeding.

**Anti-fibrinolytic drugs:** As bleeding from endometrium is controlled by vasoconstriction and myo-metrial contractions, local aggregation of platelets, and fibrin deposits which are under the influence of prostaglandins. Antifibrinolytic drugs inhibit the conversion of plasminogen to plasmin and once prevent the breakdown of clots, they reduce the blood loss by approximately 40 - 50%, they also increases the collagen synthesis which forms the fibrin matrix and increases the tensile strength of clots. The dose used is 500 - 1000 mg every 6 - 8 hrs for first 4 days.

**NSAID:** Non-steroidal anti-inflammatory drugs are prostaglandin synthase inhibitors, they acts by inhibiting biosynthesis of cyclic endo-peroxidases which converts arachidonic acid to prostaglandins. NSAID acts by blocking the action of prostaglandins by directly interfering at receptor sites. RCOG IN 1998 stated that mefenamic acid 500 mg and NSAID in general reduces blood loss by 20 - 50%. According to Cochrane collaboration group 2010, for maximum benefit NSAID must be taken 7 days prior to expected date.

**Progesterone:** Progesterone can be used either as oral formulations or as depot injections or as an IUCD. Progesterones have growth limiting activity on endometrium and by causing down regulation of oestrogen receptors. Anovulatory bleeding is treated with Norethisterone or medroxyprogesterone acetate (MPA). For proliferative phase high dose of norethisterone 10 - 30 mg/day is given to stop the bleeding, usually it is tapered to 5 mg/day over a period of 21 days. In case of endometrial hyperplasia medroxyprogesterone acetate 10 mg BD is given from 16 - 25 day of cycle for 3 - 6 months. In some cases, LNG-IUCD is used [6]. It is only contraceptive approved by USFDA for the treatment of menorrhagia. LNG-IUCD is found to be better tolerated than classic 21 days oral regime and also has better patient satisfaction and has reduced treatment cost.

**OC pills:** In case of secretory endometrium combined oestrogen progesterone pills are given from day 5 to day 25 for 3 to 6 months. Oestrogen being steroid it enter cells freely and increases the transcription of oestrogen receptors on the endometrial cells.

**GNRH agonists:** Used for treatment of AUB caused by fibroid or adenomyosis.in fibroid they decreases the size of fibroid by 50% in 3 months. A dose of 3.75 mg IM once a month for 3 months is used. They acts by causing hypoestrogenic environment.

**SPRM:** Selective progesterone receptor modulators have anti proliferative effect on leiomyoma cells and increases proapoptotic effect which is responsible for size reduction in fibroid. Upto 30% reduction in fibroid volume can be achieved. Ulipristal acetate is used in a dose of 5 mg once a day for 3 months [5].

**SERM:** Selective oestrogen receptor modulators act on oestrogen receptors. Ormeloxifene a type of SERM bind with high affinity to oestrogen receptors. It normalises bleeding from endometrial cavity by regulating the expression of oestrogen receptors in endometrium. Dose of ormeloxifene used is 60 mg twice weekly for 12 weeks followed by weekly once for 12 weeks.

When medical management is unable to control the bleeding over 6 month periods surgical management needs to be considered such as hysteroscopic endometrial resection or endometrial ablation and other radical options such as hysterectomy can be considered.

**Endometrial ablation:** In endometrial ablation endometrial lining of uterus is destroyed as it decreases the ability to get pregnant, it should be advised to patients who have completed their family. Also some women may've little menstrual flow in some cycles so it is imperative that women should be counselled about this otherwise they may take bleeding as a treatment failure. Endometrial ablation procedures are first generation that includes TCRE (trance-cervical resection of endometrium) using diathermy loop or roller ball coagulation. Second generation methods includes thermal balloon ablation microwave endometrial ablation radio frequency ablation and cryoablation. In thermal balloon ablation isotonic saline is filed in a balloon catheter and is placed in endometrial cavity and is inflated and heated to 87 degree centigrade for 8 minutes [7].

Microwave endometrial ablation uses high frequency microwave energy which heated endometrium in rapid manner but depth of destruction is less than 6 mm.

Radio frequency ablation uses a microprocessor based unit containing gold mesh array this devise is placed in endometrial cavity and energy bursts are applied for a period of 80 - 90 seconds.

In cryo ablation liquid nitrogen is used to freeze the endometrium.

**Uterine artery embolisation:** Uterine artery embolisation is used in AUB due to adenomyosis or fibroid uterus. In fibroid uterus UAE as shown by NICE guidelines that: current evidence of UAE for fibroid uterus showed that procedure is effective for symptom relief in short term and medium term for substantial proportion patient and there are no major safety concern [8].

**MRI guided high frequency ultrasound:** It uses non ionising ultrasonic waves to heat the tissues. In this fibroids are gradually heated under continuous MRI monitoring in small stages until a temperature of > 55 degree centigrade is reached to achieve the complete denaturation of tumor tissue [9].

So, considering pathology of AUB treatment options are to be individualised with very good results. and various modern modalities needs to be considered for the AUB management.

### Bibliography

1. American college of obstetrics and gynaecologist. Management of anovulatory bleeding. ACOG practice bulletin". Washington DC, ACOG 14 (2000).
2. Fritz MA and Speroff L. "Clinical Gynaecology endocrinology and infertility (8<sup>th</sup> edition) Philadelphia: workers Kluwer health Lipinkott, Williams and Wilkins (2011).
3. Munro MG., *et al.* "FIGO classification system (PALM-COEN) for causes of abnormal uterine bleeding in non gravid women of reproductive age". *International Journal of Gynecology and Obstetrics* 113 (2011): 3-13.
4. Sweet MG., *et al.* "Evaluation and management of abnormal uterine bleeding in premenopausal women". *American Family Physician* 85.1 (2012): 35-43.
5. Pourcelot AG., *et al.* "Place of ulipristal acetate in the management of uterine fibroids, preoperative treatment or sequential treatment?" *Journal of Gynecology Obstetrics and Human Reproduction* 46.3 (2017): 249-254.
6. Louie M., *et al.* "Comparison of levonorgesterol releasing intrauterine system , hysterectomy and endometrial ablation for heavy menstrual bleeding in a decision analysis model". *International Journal of Gynecology and Obstetrics* 139.2 (2017): 121-129.
7. Yasmin S., *et al.* "Microwave endometrial ablation as an alternative to hysterectomy for the emergent control of uterine bleeding in a patients who are poor surgical candidates". *Archives of Gynecology and Obstetrics* 280.2 (2009): 279-282.

8. De Bruijn AM, *et al.* "Uterine artery embolisation for symptomatic adenomyosis:7 year clinical follow up". *Cardio Vascular and Interventional Radiology* 40.9 (2017): 1344-1350.
9. Hesley GK, *et al.* "A clinical review of focussed ultrasound ablation with magnetic resonance guidance ;an option for treating uterine fibroids". *Ultrasound Q* 25.4 (2008): 394-405.

**Volume 9 Issue 9 September 2020**

**©All rights reserved by Sachin Vijay Naiknaware.**