
بسم الله الرحمن الرحيم

abnormal uterine bleeding (AUB)

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- **most common complaint of reproductive age women .**
- **Anovulatory or dysfunctional uterine bleeding describes the spectrum of abnormal menstrual bleeding patterns that can occur in anovulatory women who have no medical illness or pelvic pathology.**

- **The mechanisms involved in anovulatory bleeding vary, but each reflects an abnormal pattern of steroid hormone stimulation.**
- **The key to successful clinical management of dysfunctional bleeding is to identify which mechanism is responsible.**

Traditional Terms Describing Abnormalities of Menstrual Bleeding(Relating to the Frequency , regularity, duration and volume of menses):

- **Amenorrhea (absent menses).**
- **Oligomenorrhea**
  (infrequent menses occurring at intervals > 35 days).
- **Polymenorrhea**
  (frequent menses occurring at intervals < 24 days).
- **Metrorrhagia**
  (Menses occurring at irregular intervals).
- **Hypermenorrhea**
  (abnormally long menses lasting > 7 days.
- **Menorrhagia (blood loss > 80 mL.)**

The suggested normal limits for frequency, regularity, and duration of menstrual flow were based on the 5th and 95th percentiles for data drawn from population

the generally accepted norms among ovulatory women for:

- **menstrual frequency (24-35 days),**
- **regularity(5 days variation),**
- **duration (2-7 days)**

During the follicular phase of the normal ovarian cycle (corresponding to the proliferative phase of the endometrial cycle), estrogen levels rise, slowly at first and then more rapidly,as the dominant ovarian follicle emerges, grows, and matures. In response to that estrogen, the functional layer of the endometrium regrows,

After ovulation, the corpus luteum derived from ovulatory follicle continues to produce estrogen and also progesterone. During the luteal phase of the ovarian cycle (corresponding of secretory phase of the endometrial cycle), estrogen and progesterone levels rise together as the corpus luteum mature.

In response to combined actions of them, the endometrium preparate for acception of a conceptus. If pregnancy and rapidly rising levels of hCG do not produce, corpus luteum regresses spontaneously. And estrogen and progesterone fall and eventually Menses begins.

Of all the different hormone effects on the endometrium, estrogen-progesteron setimulation produces the most stable endometrium, and their combined withdrawal yields the most consistent menstrual characteristics.

Even slight deviations from the usual pattem in the timing, amount, or length of flow can cause concern.

Careful attention to details of the menstrual history can be very helpful in distinguishing anovulatory bleeding from other causes.

Menstrual cycles often are irregular for the first 12-18 months after menarche, due to immaturity of the hypothalamic-pituitary-ovarian .

Cycles remain relatively long for the first 5-7 years after menarche, thereafter decreasing gradually in length and becoming more regular.

The prevalence of anovulatory cycles is higher in women under age 20 and over age 40.

Menstrual cycle characteristics generally do not Change during the reproductive years.

both high and low BMI, body fat mass, are associated with an increased mean cycle

variations in cycle length reflect differences in the length of the follicular phase *of the ovarian cycle*.

Within a few years after menarche, the luteal phase becomes extremely consistent (13-15 days in duration) and remains so until the perimenopause.

Although 28 days is the most commonly reported intermenstrual interval,

only approximately 15% of cycles among reproductive aged women actually are 28 days in length.

Less than 1 % of women have a regular cycle lasting less than 24 days or more than 35 days.

Most women have cycles that last from 24 to 35 days

The usual duration of menstrual flow is 4 -6 days,

but 3% Menses may last as few as 2 days or as many as 7 days.

The average volume of menstrual blood loss is approximately 30 ml.

greater than 80 mL is abnormal.

most of menstrual blood loss occurs during the first 3 days.

women who menstruate more often than every 24 days or less often than every 35 days, or consistently flow for more than 7 days or menstrual blood loss exceeding 80 mL deserve evaluation.

The correlation between perceived and actual blood loss is relatively poor.

1/4 to 1/3 of women with normal periods considered their menstrual blood loss excessive,

and 40% of those with documented menorrhagia (blood loss > 80 mL) described their menses as light or moderate.

Endometrial Responses to Steroid Hormones: Physiologic and Pharmacologic

The normal menstrual bleeding that occurs at the end of an ovulatory cycle results from estrogen-progesterone withdrawal, Which is regular,predictable, and consistent in volume and duration.

Endometrial Bleeding also can result from:

- **estrogen withdrawal,**
- **estrogen breakthrough ,**
- **Progestogen withdrawal,**
- **progestogen breakthrough.**

estrogen withdrawal bleeding:

Example:

- **Bilateral oophorectomy during the follicular phase,**
- **cyclic estrogen-only hormone therapy in castrate**

  or postmenopausal women,
- **midcycle bleeding that accompany the transient but abrupt fall in estrogen levels immediately preceding ovulation.**

estrogen breakthrough bleeding:

- The amount and duration of bleeding can vary widely, depending on the amount and duration of unopposed estrogen stimulation.

- low levels of chronic estrogen exposure result in intermittent spotting or light in volume but may be prolonged.

- sustained high level estrogen stimulation results in lag intervals of amenorrhea punctuated by acute episodes of often profuse bleeding that

Progestogen withdrawal bleeding:

- is observed when treatment with exogenous progesterone is discontinued .

- usually occurs only when the endometrium has first been primed with endogenous or exogenous estrogen.

- The amount & duration of bleeding can vary widely and generally correlates with the level & duration of previous estrogen-stimulated endometrial proliferation.

- In women with low estrogen levels, bleeding is generally light and may not occur at all.

- In those with high estrogen levels or long intervals of amenorrhea, bleeding can be heavy and prolonged, but still is self-limited.

- Between the extremes, the amount and duration of bleeding induced by progestrogen withdrawal is typically similar to that observed at the end of a normal ovulatory cycle.

In women receiving cyclic hormone therapy with exogenous estrogen and progestin , bleeding follows withdrawal of progestin even if estrogen treatment continues;

progestin withdrawal bleeding can be delayed, but only if estrogen levels are increased by l0-20 fold.

Progestogen breakthrough bleeding :

- occurs when the ratio of progestogen to estrogen is unfavorably high. Unless there is sufficient estrogen to balance its action.

- continuous treatment with exogenous progesterone will result in intermittent bleeding of varying duration that is generally light.

- a pattern very similar to low level estrogen breakthrough bleeding described above.

PROGESTOGEN BREAKTHROUGH BLEEDING

Example:

- **bleeding observed in women using the progestin-only contraceptive("*minipill,long-acting progestin-only ,progestin implants, Depot medroxyprogesterone acetate).***

- **The breakthrough bleeding observed in women using combination estrogen-progestin contraceptives also is a form of progestrone breakthrough bleeding. the progestin component is always the dominant hormone and the effect on the endometrium is profoundly progestational**

Pathophysiology of Anovulatory bleeding:

Pathophysiology of Anovulatory bleeding:

- the patterns of ovarian steroid hormone production and endometrial stimulation in anovulatory women are unpredictable.
- By definition, the anovulatory woman is always in the follicular phase of the ovarian cycle and in the proliferative phase of the endometrial cycle.
- There is no luteal or secretory phase because there is no ovulation or cycle.
- The only ovarian steroid signal the endometrium receives is estrogen, levels of which constantly fluctuate.

- Over a period of time, uninterrupted estrogen can stimulate the endometrium to proliferate where it becomes fragile.

- Without the growth limiting effects of progesterone, the endometrium lacks the stromal support structure to maintain stability and Focal areas breakdown and bleed induce.

The heaviest episodes of anovulatory Bleeding tend to occur in women with sustained high levels of estrogen:

- women with PCO,
- obese women,
- postmenarcheal adolescents,
- Perimenopausal women

post-tubal ligation syndrome of menstrual abnormalities :

data suggest strongly that women who have a tubal sterilization procedure are no more likely than other women to have menstrual abnormalities.

Diagnostic evaluation of Abnormal Uterine Bleeding:

A careful history and physical examination:

The history should seek each of the following characteristics:

- **Intermenstrual interval (number of days, regularity)**
- **Volume (heavy ,light, variable)**
- **Duration (normal or prolonged, consistent or variable)**
- **Onset of abnormal menses (perimenarcheal, sudden, gradual)**
- **associations (postcoital, postpartum, post-pill, weight gain or loss)**
- **Associated symptoms (dysmenorrhea, dyspareunia, galactorrhea, hirsutism)**
- **Underlying systemic illness (renal, hepatic hematopoietic, thyroid)**

In the majority of women with true anovulatory bleeding, the menstrual history alone can establish the diagnosis with sufficient confidence that treatment can begin without additional laboratory evaluation or imaging.

- Infrequent, irregular, unpredictable menstrual bleeding that varies in amount, duration, and character and accompanied by any visible or palpable genital tract abnormality is not difficult to interpret and are more likely related to an anovulation.
- Conversely, regular monthly periods that are heavy or prolonged are more likely related to an anatomical lesion or a bleeding disorder.

Objective methods for measuring menstrual blood loss include :

- ✓**the photometric alkaline,**
- ✓**Hematin test,**
- ✓**menstrual pictograms**

the most practical approach is the menstrual history.

subjective Indicators of abnormally heavy menstrual bleeding :

- ✓ changing pads more often than every 3 hours,
- ✓ use of more than 20 over a single menses,
- ✓ the need to change protection during the night,
- ✓ the passage of clots larger than an inch in diameter, menses lasting longer than 7 days,
- ✓ diagnosis of anemia
- ✓ interferes with daily activities
- ✓ causes anxiety

Midcycle bleeding may be an occasional consequence of the transient but abrupt fall in estrogen levels that occurs at the time of ovulation, but women who have recurrent episodes of intermenstrual bleeding often have intrauterine pathology and deserve evaluation.

Exact general & genital examination & exrautrine sources for abnormal bleeding should be done

Laboratory tests:

1. pregnancy test (for complication of pregnancy)
2. CBC to exclude anemia and thrombocytopenia

After excluding pregnancy, the most important question is whether the patient is ovulating, because the causes and clinical management of ovulatory and anovulatory uterine bleeding are quite different.

3. When the menstrual history alone does not hellp, a well timed serum progesterone determination during the

A logical strategy is to obtain the test between cycle day 22 and24, after ovulation in the longest normal cycle and before the end of the shortest normal cycle;

any value >3 ng/ml provides reliable evidence of ovulation.

basal body temperature recordings can be very informative in women with a confusing pattern of bleeding.

4. Endometrial biopsy also can be used to assess ovulatory function (proliferative vs. secretory endometrium)

endometrial sampling should be reserved for those at risk for endometrial

5. In sexually active women, a nucleic acid based test for chlamydia and gonorrhea wet prep
6. TSH.
7. Liver or Renal function tests (for those with known or suspected disease).
8. coagulation studie (platelet count, PT , aPTT ,measurement of von Willebrand factor, von Willebrand factor activity, factor VIII level, and blood typing ,
(in Adolescents or women with a suspicious personal or family history of bleeding symptoms or unexplained menorrhagia)

endometrial biopsy:

can exclude endometrial hyperplasia or cancer.

Age over 35 or 40 years is widely considered a risk factor for endometrial disease and cited as an indication for biopsy,

but the duration of exposure to unopposed estrogen stimulation is the more critical risk factor.

small flexible suction cannulas cause less discomfort than older traditional biopsy instruments and yield comparable results.

hospital-based curettage without hysteroscopy is no longer the gold

biopsy can help to:

--reveal any intrinsic endometrial disease(chronic endometritis, hyperplasia, adenocarcinoma)

--guide the choice of treatment

- **-An inactive or atrophic endometrium identifies women unlikely to respond to progestational therapy.**

- **-In women with no recent exposure to exogenous progestins, a secretory endometrium provides reliable evidence of recent ovulntion and to need to search for an anatomical cause.**

Imaging :

can help to :

differentiate anovulatory bleeding from anatomical causes(myomas, polyps) .

cavitary lesion abnormally.

thin or thick endometrium.

biopsy is unnecessary when:
the endometrial thickness is less than 5 mm,

biopsy is indicated when:

- **the clinical history suggests long-term unopposed estrogen exposure even when the endometrial thirkness is "normal" (5-12 mm),**
- **Endometriol thickness is greater than 12 mm even when clinical suspicion of disease is low**

Sonohysterography (hydrosonography and saline infusion sonography):

transvaginal ultrasonography during or after introduction of sterile saline using a catheter

- **it sharply defines cavity contours and readily demonstrates even small intrauterine lesion**
- **compares favorably with hysteroscopy.**
- **The combination of sonohysterography and endometrial biopsy offers a high sensitivity and high negative predictive value for detection of endometrial and uterine pathology .**

disadvantage :

minor cavity contour abnormalities or blood clots may be misinterpreted as polyps.

Hysteroscopy :

is the definitive method for both diagnosis and treatment , but also is invasive.

hysteroscopy has been reserved for treatment of disease identified by other less invasive methods.

Modern hysteroscopes having an outer diameter of 2 or 3 mm permit diagnostic and minor operative procedures to be performed in the office setting with minimal anesthesia.

MRI:

- It can reliably define uterine anatomy,
- distinguish between adenomyosis and leiomyomata,
- Determination of location of myomas
- helpful in women who cannot be imaged adequately with ultrasonography,

Treatment of Anovulatory bleeding:

The primary objective of treatment in women with anovulatory bleeding is to induce or restore the natural control mechanisms.

Hospitalization is indirected for:

women with active hemorrhage who ,

- **are hemodynamically unstable**
- **those with symptomatic anemia**

- **insert a Foley catheter with a 30 mL balloon into the uterus to tamponade the bleeding while establishing intravenous access for fluid administration and, if necessary transfusion.**

- **Once the patient is stabilized, the diagnostic evaluation proceed .**

- **Acute anovulatory bleeding can be treated with estrogene, strogene-progestin or progestin alone.**

- **The best Choice depends primarily on the condition of the endometrium at the time.**

Progestin therapy:

progestins are the mainstay of treatment for anovulatory bleeding.

Progestins are powerful anti-estrogens.

Progestin therapy:

In oligomenorrheic anovulatory women with episodic abnormal bleeding, progestogen withdrawal bleeding can be induced by cyclic treatment with cyclic progestin therapy (medroxyprogesterone acetate 5-10 mg daily orally for 12-14 days each month).

Cyclic progestin therapy restores the normal sequence of endometrial stimulated estrogen, followed by estrogen plus progestogen, followed by withdrawal.

The interval of progestin therapy can be fixed to the calendar (beginning on the first of every month) or to the onset of menses(beginning 15-16 days after onset of the last progestin-induced menses).

Progestin therapy:

Although cyclic progestin therapy generally works well in women who are completely anovulatory and not sexually active.
treatment with an estrogen-progestin contraceptive is the better choice for those who likely still ovulate or want to avoid pregnancy.

standard cyclic progestin treatment regimens do not reliably suppress the hypothalamic-pituinry-ovarian axis, will not prevent random ovulation, and are not contraceptive.

Failed progestin treatment suggests strongly that there is other pathology .

Progestin therapy:

Acute severe anovulatory bleeding also can be treated effectively with high-dose progestin alone when endometrium is normal or Increased in thickness: =medroxyprogesterone acetate 10-20 mg twice daily; =megestrol acetate 20-40 mg twice daily;

=norethindrone 5 mg twice daily,

,decreasing to once daily treatment after 7-10 days
Treatments hould continue for approximately 3 w.

High-dose progestin treatment induces stabilizing

predecidual changes in a thickened, vascular, and fragile endometrium. However, a substantial amount of tissue remains to be shed upon progestin withdrawal, resulting in a so-called "medical curettage.“

Thereafter, standard cyclic progestin

Progestin therapy:

Depot-medroxyprogesterone acetate

- (150 mg IM every 3 months) can be a useful option for maintenance therapy in women who have difficulty with or cannot take estrogen-progestin contraceptives.
- However, depot progestin treatment has no place in the acute management of abnormal bleeding.
- Once given, it cannot be withdrawn, and if unsuccessful, its effects can be dfficult to overcome.
- Episodic breakthrough bleeding is relatively

estrogen-progestin therapy :

- Women with anovulatory bleeding who are sexually active and not immediately prepared to pursue pregnancy.

- A gradual but progressive decrease in the volume and duration of flow (at least 60%)and associated dysmenorrhea can be expected.

Longer cycles of treatment increase the incidence of episodic breakthrough bleeding.

estrogen-progestin therapy :

Acute prolonged episodes of heavy anovulatory bleeding also can be treated effectively with high-dose estrogen-progestin therapy, when endometrium is normal or increased in thickness.

In women with a thickened, vascular, and fragile endometrium, estrogen-progestin treatment inhibits further growth of endometrium and stabilize it.

estrogen-progestin therapy :

---Any monophasic combination oral contraceptive can be used, beginning with one pill twice daily, and decreasing to one pill daily thereafter.

---Treatment should continue for a total of at least 2 weeks,

---Bleeding slows or stops within 24-48 hours.

---Thereafter estrogen-progestin treatment can continue (one pill per day) for a longer interval of time.

Failed estrogen-progestin indicates the need for

Estrogen therapy :

Intermittent spotting frequently is associated with low levels of Estrogen stimulation (estrogen breakthrough bleeding)and a very thin, unstable endometrium.

In this setting, the usual beneficial effect of progestin treatment cannot be achieved because estrogen levels are insufficient to stimulate the growth that serves as the foundation for the actions of progestin.

Estrogen therapy :

estrogen therapy is the most effective initial treatment strategy in women whose endometrium becomes denuded after:

- **prolonged heavy bleeding,**
- **for management of episodic progestogen breakthrough bleeding observed in women receiving**
  - **low dose estrogen-progestin contraceptives ,**
  - **depot medroxyprogesterone acetate ,**
  - **the progestin-only "minipill, progestin implants.**

Estrogen therapy :

In all such scenarios, a short interval of estrogen addes :

- **conjugated estrogens 1.25 mg for 7-10 days or**
- **micronized estradiol 2.0 mg daily for 7-10 days**

In some women, the problem recurs frequently or persists. Higher doses, longer durations, or repeated courses of estrogen treatment are sometimes needed.

high-dose estrogen therapy:

When acute, heavy bleeding results in a thin, denuded endometrium, high-dose estrogen therapy is the best initial treatment.

progestin or estrogen-progestin therapy is unlikely to succeed and may aggravate the problem.

Estrogen stimulates endometrial re-epithelialization and proliferation.

high-dose estrogen therapy:

IV estrogen therapy (25 mg conjugated equine estrogens every 4 hours IV until bleeding subsides ,for up to 24 hours)+an antiemetic (e.g., promethazine, 12.5-25 mg IM or rectally), The regimen controls acute bleeding effectively 70% usually within 4-8 hours. Thereafter,high-dose estrogen therapy should continue : orally 2.5 mg conjugated estrogens or 2.0 mg micronized estradiol every 6 hours, tapering to a once daily dose after bleeding is controlled, and adding a progestin(e.g., medroxyprogesteron aecetate 5 -10 mg daily x 7-10 days) or changing to an estrogen-progestinc ontraceptive

high-dose estrogen therapy:

In the hemodynamically stable patient with a denuded endometrium whose bleeding is less emergent but still acute and quite heavy , the same high-dose oral estrogen and antiemetic treatment regimen generally is effective.

High-dose IV or oral estrogen treatment may increase the risk of thromboembolism.

As with any therapeutic decision, the benefits of treatment must be weighed against its potentiol risks and those of alternative methods for the management,
In women with a past episode or family history of thromboembolism, high-dose estrogen treatment

Curettage :

In women with acute bleeding, dilation and curettage can be performed as both a therapeutic and diagnostic procedure.

Curettage is an effective way to stop acute uncontrollable uterine bleeding in the absence of any apparent pathology. The mechanism responsible for the therapeutic effects of curettage is not entirely clear.

Blind curettage easily can miss focal lesions and, in most cases, does not treat the underlying cause of bleeding.

Consequently,curettage ideally should be combined with hysteroscopy.

Endometrial hyperplasia

Endometrial hyperplasia is a histologic diagnosis, with proliferating glands of varying size and shape and a increased gland-to-stroma ratio .

Endometrial hyperplasia results almost exclusively from unopposed chronice strogen stimulation

Endometrial hyperplasia

endometrial hyperplasia is classified as simple or complex , with or without nuclear atypia .

complex hyperplasia without nuclear atypia : --------they regress spontaneously, after curettage, or with progestin treatment, ---are associated with little risk (1-3%) for progression to adenocarcinoma.

atypical endometrial hyperplasia :

=does not often spontaneously regress,
=can be quite resistant to even repeated curettage or prolonged high dose progestational therapy,
=has significant risk (10-30%) of progression to adenocarcinoma if left untreated(a precancerous lesion).

Endometrial hyperplasia

Simple and complex endometrial hyperplasia without atypia can be corrected using progestin regimens :

- **Cyclic progestint herapy:**
  medroxy progesterone acetate 5 -10 mg daily or norethindrone Acetate 5 mg daily for 14 days/month x 3-6 m) induces regression in 80-90% of patients .

- **longer-term contraception :**

insert a levonorgestrel releasing intrauterine system(LNG-IUS or mirena).

--Repeat biopsy to confirm regression is recommended.

--in those with a LNG-IUS, can be performed without removing the device.

Endometrial hyperplasia

Endometrial hyperplasia with atypia is best treated by hysterectomy.

Women intent on preserving their reproductive potential: progestins,(more potent and longer durations of treatment)

- **megestrol acetate 80 mg twice daily for 3-6 months**

- **Insertion of an mirena is another effective treatment option.**

The median time to regression is approximately 9 m, repeate biopsies to confirm resolution of the lesion.

persistent disease after7-9 m of treatment predicts failure .

resistant lesions in women who remain adamantly opposed to surgery may require even higher and

Endometrial hyperplasia

- Women who respond to medical management should be encouraged to pursue pregnancy at the earliest possible time and must be carefully monitored because recurrence is common.

- Those who fail to respond to medical treatment will require hysterectomy

Other Treatments for Heavy Menstrual bleeding:

- A specific cause for heavy or prolonged menstrual bleeding in ovulatory women cannot always be identified.
- local defects in endometrial hemostasis are presumed responsible.
- Nevertheless, the problem still can be effectively managed using a variety of nonspecific medical and surgical therapies.

Nonsteroidal anti-inflammatory drugs (NSAIDs) :

prostaglandins have important actions on the endometrial vasculature and in endometrial hemostasis. NSAIDs inhibit prostaglandin synthesis and decrease menstrual blood loss. also alter the balance between thromboxane A, (a vasoconstrictor and promoter of platelet aggregation) and prostacyclin (a vasodilator and inhibitor of platelet aggregation).

NSAIDs decrease both normal menstrual bleedingand the increased bleeding associated with an IUD.

NSAIDs

NSAID reduces blood loss about 20-40% .

- **Ibuprofen (400 mg, 3 times daily),**
- **mefenamic acid (500 mg 3 times daily),**

NSAIDs therapy might be considered the first line therapy for ovulatory women with heavy menstrual bleeding and no demonstrable pathology.

usually beginning with the onset of bleeding and continuing for 3-5 days as necessary.

NSAIDs provid relief from dysmenorrhea, even when menses are normal.

Side effects are few.

Estrogen-progestin contraceptives :

can be used to reduce menstrual blood loss in ovulatory women with heavy menstrual bleeding, regardless whether menorrhagia is associate with pathology (myomas, adenomyosis)

or is unexplained(to 40%) .

The levonorgestrel-releasing intrauterine system (LNG-IUS; Mirena) :

has a reservoir containing 52 mg levonorgestrel mixed with poly dimethyl siloxane, which controls the rate Of hormone release.

For contraceptive purposes, is approved for 5 years, but lasts for 7 years, and perhaps up to 10 years.

blood loss in women with heavy menstrual bleeding can be reduced by 75-95%, due to progestin-induced decidualization of the endometrium.
Mirena also compares favorably to that with ablation or hysterectomy.

Mirena is an attractive option for:

- ✓ ovulatory women with heavy menstrual

long-acting gonadotropin-releasing hormone agonist (GnRHa):

Treatment with a (GnRHa):

has been used effectively as a preoperative adjunct in women awaiting conservative (myomectomy, endometrial ablation) or definitive surgery (hysterectomy) for abnormal bleeding:

- **allow hemoglobin levels to return to normal,**
- **and decrease the transfusion with surgery**
- **decrease the size of myomas and uterine mass,**
- **thinning the endometrium before ablation,**
- **improves operating conditions and outcomes.**
- **in the management of abnormal menstrual bleeding that**
- **may follow organ transplantation where the toxicity of immunosuppressive drugs makes use of sex steroids less desirable**

the expense and side effects resulting from estrogen deficiency (hot flashes, bone mineral depletion) make GnRHa an unattractive long-term strategy for treatment of abnormal bleeding.

Tranexamic acid :

is an antifibrinolytic agent that has been used widely in Europe for the treatment of menorrhagia.
prevents fibrin degradation.
An oral form of the drug was approved by the U.S. Food and Drug Administration in 2009 for the treatment of heavy menstrual bleeding.

The drug is administered for 4-7 days during menses
(1-1.5 gm 3-4 times daily).

Decreases menstrual blood loss by 35-60%.

The risk for thrombosis associated with tranexamic acid is controversial.Consequently,it

Endometrial ablation :

Endometrial ablation is another, increasingly popular option for the management of unexplained menorrhagia when medical treatments are rejected, unsuccessful,or poorly tolerated.


A Dreamy World
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