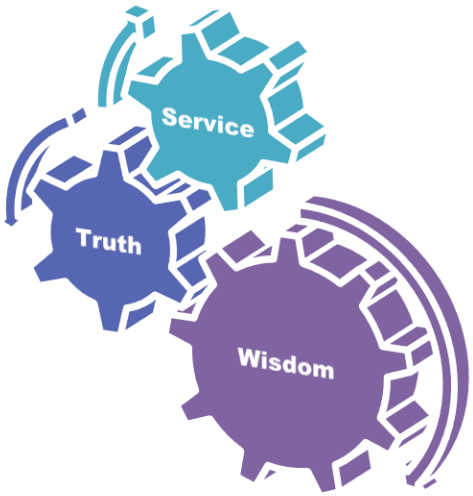

بسم الله الرحمن الرحيم

# BLOOD MODULE

## CASE BASED LEARNING (CBL)

## 1st Year MBBS

# Motto




# Vision; The Dream/Tomorrow

- To impart evidence based research oriented medical education
- To provide best possible patient care
- To inculcate the values of mutual respect and ethical practice of medicine

# CBL

- Case-based learning (CBL) is a teaching method where students learn by analyzing real-life cases and applying their knowledge to solve problems or make decisions. CBL is often used in medical education, where students analyze patient cases to develop diagnostic and treatment skills.

# Conducting CBL

- Identify the learning objectives
- Choose a case: Select a real-life case that is relevant to the learning objectives you have identified
- Present the case
- Analyze the case: Have students work in groups to analyze the case
- Develop hypotheses

# Conducting CBL (Cont.)

- Test hypotheses: Have students test their hypotheses by using relevant diagnostic tests or other methods.
- Discuss the results
- Discuss the results
- Evaluate learning: Evaluate student learning by assessing their ability to analyze the case, develop hypotheses, and apply their knowledge of medical physiology to diagnose and treat the patient.

# LEARNING OBJECTIVES

At the end of the CBL, students will be able to:

- Summarize the etiologies of abnormal uterine bleeding that can be remembered with the acronym PALM-COEIN, explaining which specific etiologies are included in the "not otherwise classified" category.
- Describe the epidemiology of abnormal uterine bleeding.

# LEARNING OBJECTIVES

- Explain the causes of abnormal uterine bleeding related to the structure of the uterus versus the clotting pathway and the disruption of the hypothalamic-pituitary-ovarian axis.
- Review the role of the interprofessional team in collaborating to treat women with abnormal uterine bleeding.

# DEFINITION OF ABNORMAL UTERINE BLEEDING

- Abnormal uterine bleeding is a broad term that describes irregularities in the menstrual cycle involving frequency, regularity, duration, and volume of flow outside of pregnancy.

# DEFINITION OF ABNORMAL UTERINE BLEEDING

- Up to one-third of women will experience abnormal uterine bleeding in their life, with irregularities most commonly occurring at menarche and perimenopause.
- A normal menstrual cycle has a frequency of 24 to 38 days and lasts 2 to 7, with 5 to 80 milliliters of blood loss. Variations in any of these 4 parameters constitute abnormal uterine bleeding.

# DEFINITION OF ABNORMAL UTERINE BLEEDING

## A

| TOILETS | Score |
|---|---|
| | 1ml |
| | 3ml |
| | 5ml |

| CLOTS | Score |
|---|---|
| | 1ml |
| | 3ml |
| | 5ml |

| TOWELS | TYPE | Score |
|---|---|---|
| | Day time | 1ml |
| | Night time | 1ml |
| | Day time | 2ml |
| | Night time | 3ml |
| | Day time | 3ml |
| | Night time | 6ml |
| | Day time | 4ml |
| | Night time | 10ml |
| | Day time | 5ml |
| | Night time | 15ml |

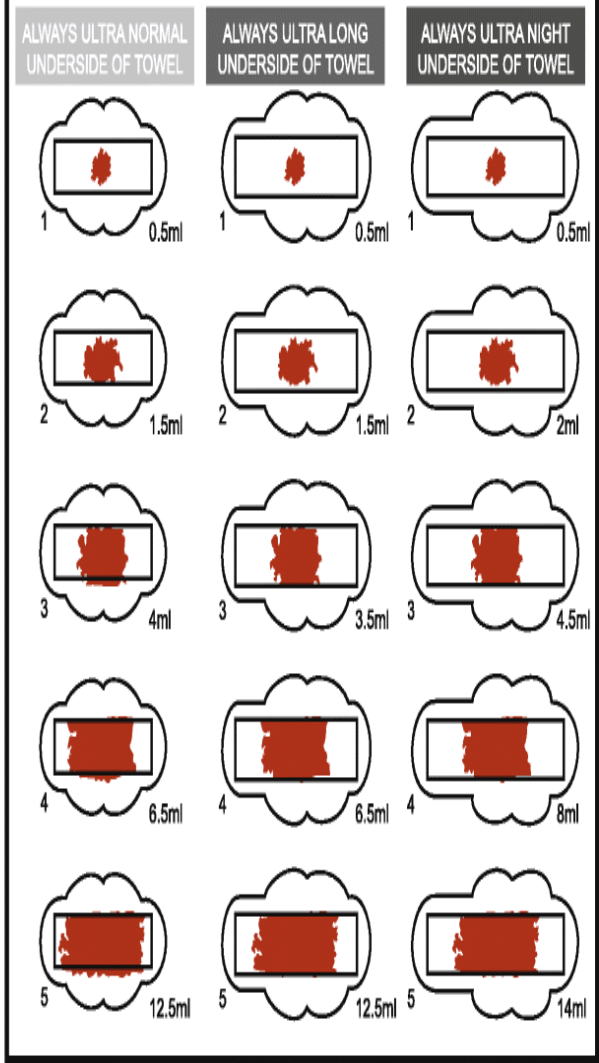
| TAMPONS | TYPE | Score in ml |
|---|---|---|
| DATE | BRAND | |
| | Regular | 0.5 |
| | Super | 1.0 |
| | Super Plus | 1.0 |
| | Regular | 1.0 |
| | Super | 1.5 |
| | Super Plus | 2.0 |
| | Regular | 1.5 |
| | Super | 3.0 |
| | Super Plus | 4.0 |
| | Regular | 4.0 |
| | Super | 8.0 |
| | Super Plus | 12.0 |

## B

| NAPKIN | TYPE | Score (mL of blood) |
|---|---|---|
| | BRAND | Kotex |
| | Day time | 1 |
| | Night time | 1 |
| | Day time | 2 |
| | Night time | 3 |
| | Day time | 3 |
| | Night time | 6 |
| | Day time | 4 |
| | Night time | 10 |
| | Day time | 5 |
| | Night time | 15 |

| TAMPON | TYPE | Score (mL of blood) |
|---|---|---|
| | BRAND | Tampax |
| | Regular | 0.5 |
| | Super | 1 |
| | Super Plus | 1 |
| | Regular | 1 |
| | Super | 1.5 |
| | Super Plus | 2 |
| | Regular | 1.5 |
| | Super | 3 |
| | Super Plus | 6 |
| | Regular | 4 |
| | Super | 8 |
| | Super Plus | 12 |

## C



# CAUSES OF ABNORMAL UTERINE BLEEDING

**PALM-COEIN** is a useful acronym provided by the International Federation of Obstetrics and Gynecology (FIGO) to classify the underlying etiologies of abnormal uterine bleeding.

# CAUSES OF ABNORMAL UTERINE BLEEDING

- P: Polyp
- A: Adenomyosis
- L: Leiomyoma
- M: Malignancy and hyperplasia
- C: Coagulopathy
- O: Ovulatory dysfunction
- E: Endometrial disorders
- I: Iatrogenic
- N: Not otherwise classified

# PATHOPHYSIOLOGY ABNORMAL UTERINE BLEEDING

- The uterine and ovarian arteries supply blood to the uterus. These arteries become the arcuate arteries; then, the arcuate arteries send off radial branches which supply blood to the two layers of the endometrium, the functionality and basalis layers.
- Progesterone levels fall at the end of the menstrual cycle, leading to enzymatic breakdown of the functionalis layer of the endometrium. This breakdown leads to blood loss and sloughing, which makes up menstruation.

# PATHOPHYSIOLOGY ABNORMAL UTERINE BLEEDING

- Functioning platelets, thrombin, and vasoconstriction of the arteries to the endometrium control blood loss.
- Any derangement in the structure of the uterus (such as leiomyoma, polyps, adenomyosis, malignancy, or hyperplasia), derangements to the clotting pathways (coagulopathies or iatrogenically), or disruption of the hypothalamic-pituitary-ovarian axis (through ovulatory/endocrine disorders or iatrogenically) can affect menstruation and lead to abnormal uterine bleeding.

# DESCRIPTIVE TERMS FOR ABNORMAL UTERINE BLEEDING (AUB)

Previously, descriptive terms were used to describe AUB, including:

**Menorrhagia:** regular but heavy menses)
**Metrorrhagia:** bleeding in between regular menses

**Polymenorrhea:** regular bleeding more often than 21 days

**Oligomenorrhea:** bleeding at a frequency of greater than 35 days.

# DESCRIPTIVE TERMS FOR ABNORMAL UTERINE BLEEDING (AUB)

| Descriptive Term | Bleeding pattern |
|---|---|
| • Menorrhagia or (hypermenorrhea) | prolonged (> 7 days) / or excessive (>80 ml) uterine bleeding occurring at regular intervals. |
| • Metrorrhagia | irregular or a cyclic bleeding (intermittent or continuous) |
| • Menometrorrhagia | irregular or a cyclic bleeding and of excessive amount |
| • Menostaxis | regular periods but prolonged duration |
| • Polymenorrhea or (Epimenorrhea) | frequent menstruation (<21 days), at regular intervals |
| • Polymenorrhagia | frequent heavy periods |
| • Intermenstual bleeding (commonly called "spotting) | uterine bleeding of variable amounts occurring between regular menstrual periods. |
| • Breakthrough bleeding | spotting or mild bleeding during the intermenstrual period o during hormonal therapy |
| • Hypomenorrhea | scanty menstruation |
| • Oligomenorrhea | infrequent menstruation (>35 days) |

# Case Scenario

Sarah is a 38-year-old woman who presents to her primary care physician's office with a complaint of heavy menstrual bleeding for the past six months. She reports soaking through a super tampon and pad every hour for the first three days of her period, and passing several large clots during this time.

# Case Scenario

She also reports that her periods last for 10-12 days, which is longer than her normal menstrual cycle. Sarah reports feeling tired and weak during her periods, and has noticed a decrease in her usual level of activity during this time. She denies any pain or other symptoms associated with her menstrual cycle.

# Case Scenario (cont.)

**History:** Sarah reports no prior history of abnormal uterine bleeding or gynaecological conditions. She has regular menstrual cycles every 28 days, and her last menstrual period was two weeks ago. She is currently not using any hormonal contraception, and has no history of recent pelvic infections, surgeries, or pregnancies.

# Case Scenario (cont.)

Sarah denies any significant medical history, including thyroid disorders or bleeding disorders. She takes no medications, and has no known allergies.

**Physical Examination:** Vital signs are within normal limits.

# Case Scenario (cont.)

**On pelvic examination**, the cervix appears healthy and normal in size and shape, with no palpable masses or tenderness.

The uterus is slightly enlarged and globular in shape, with no palpable masses or tenderness. No adnexal masses or tenderness is noted.

The remainder of the physical examination is unremarkable.

# Discussion Questions:

1. What is the likely diagnosis for Sarah's symptoms?
2. What are the possible causes of this condition and how would you differentiate between them?
3. What diagnostic tests would you order to further evaluate Sarah's symptoms?
4. What are the potential complications of this condition and how would you monitor for them?

# Discussion Questions:

5. What treatment options are available for this clinical condition and how would you counsel Sarah about each option?

6. What are the potential benefits and risks of hormonal and non-hormonal treatment options?

7. How would you manage Sarah's symptoms in the short-term and what is the role of long-term follow-up care?

# Discussion Questions:

8. How would you ensure that Sarah is fully informed and involved in the decision-making process for her care?

# REFERENCE BOOKS:

Guyton And Hall textbook of Medical Physiology 14th Edition.

Davidson's Principles and Practice of Medicine - 24th Edition

Oxford Handbook of Clinical Medicine

# Suggested research article

1) Davis E, Sparzak PB. Abnormal Uterine Bleeding. [Updated 2022 Sep 9]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK532913/

2) Mullins TL, Miller RJ, Mullins ES. Evaluation and Management of Adolescents with Abnormal Uterine Bleeding. *Pediatr Ann*. 2015;44(9):e218-e222. doi:10.3928/00904481-20150910-09

# How To Access Digital Library

- **Steps to Access HEC Digital Library**

1. Go to the website of HEC National Digital Library.
2. On Home Page, click on the INSTITUTES.
3. A page will appear showing the universities from Public and Private Sector and other Institutes which have access to HEC National Digital Library HNDL.
4. Select your desired Institute.
5. A page will appear showing the resources of the institution
6. Journals and Researches will appear
7. You can find a Journal by clicking on JOURNALS AND DATABASE and enter a keyword to search for your desired journal.


Thank You!