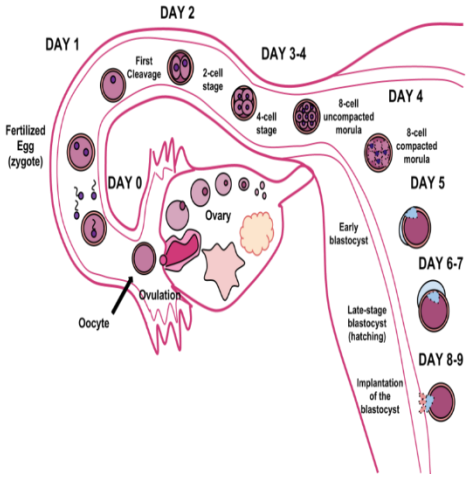
WOMENS' HEALTH

- Emergency Contraception
- Cystitis
- Primary Dysmenorrhea
- Vaginal Discharge
- Premenstrual Syndrome
- Heavy Menstrual Bleeding

Course Name: Over-the-Counter drugs
Course Code: 0521416
Lecturer: Ms. Asma El-Shara'. MPH
Faculty Of Pharmacy,
Philadelphia University-Jordan

CONTRACEPTION AND CONTRACEPTIVES

Definitions



- **Conception (Pregnancy)**

  Is the fertilization of mature ovum by a sperm, known as an embryo or fetus, in a woman's uterus.

- **Contraception (birth control):**

  Is the prevention of pregnancy following sexual intercourse by:

  1. Inhibiting sperm from coming into contact with a mature ovum
  2. Preventing a fertilized ovum from implanting successfully in the endometrium.

- **Contraceptive:**

  A device, drug, or chemical agent that prevents conception.

MENSTRUAL CYCLE

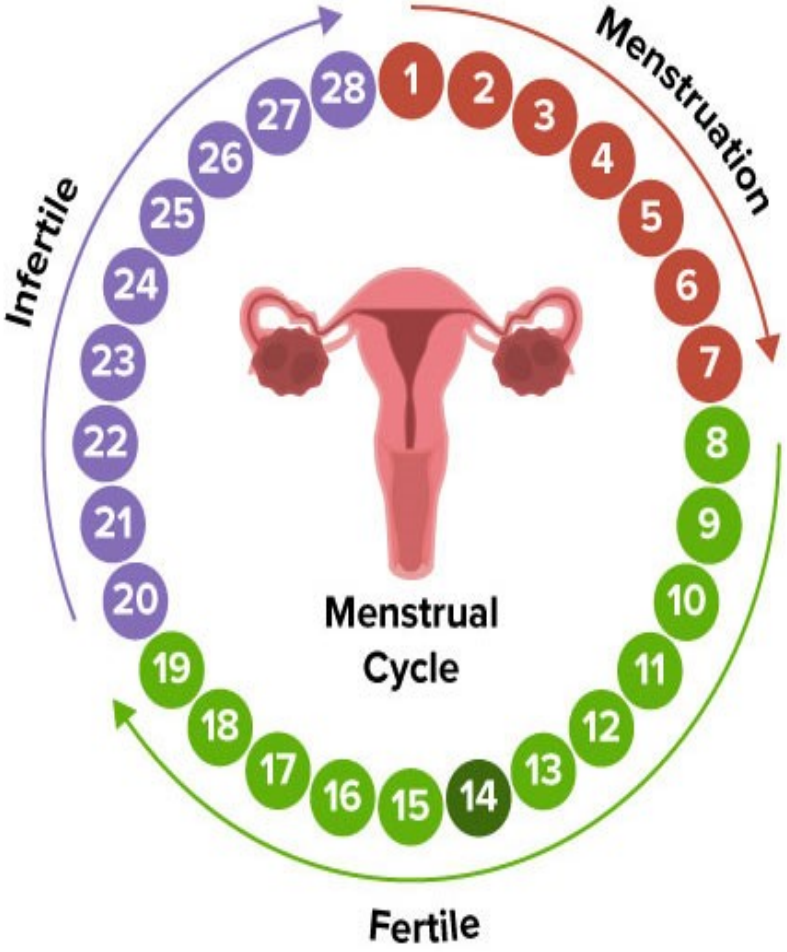
The cycle of menstruation begins around the age of 12 years, and continues to occur in nonpregnant women until menopause, usually around age 50 years.

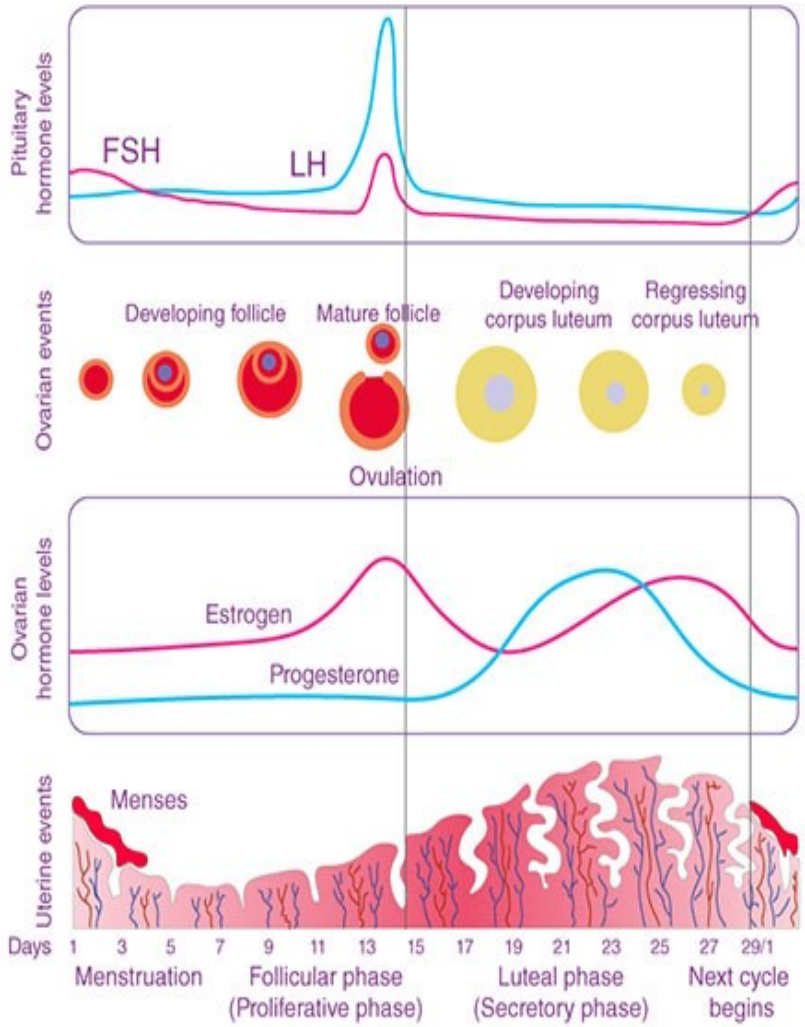
Menstrual cycle can be affected by:

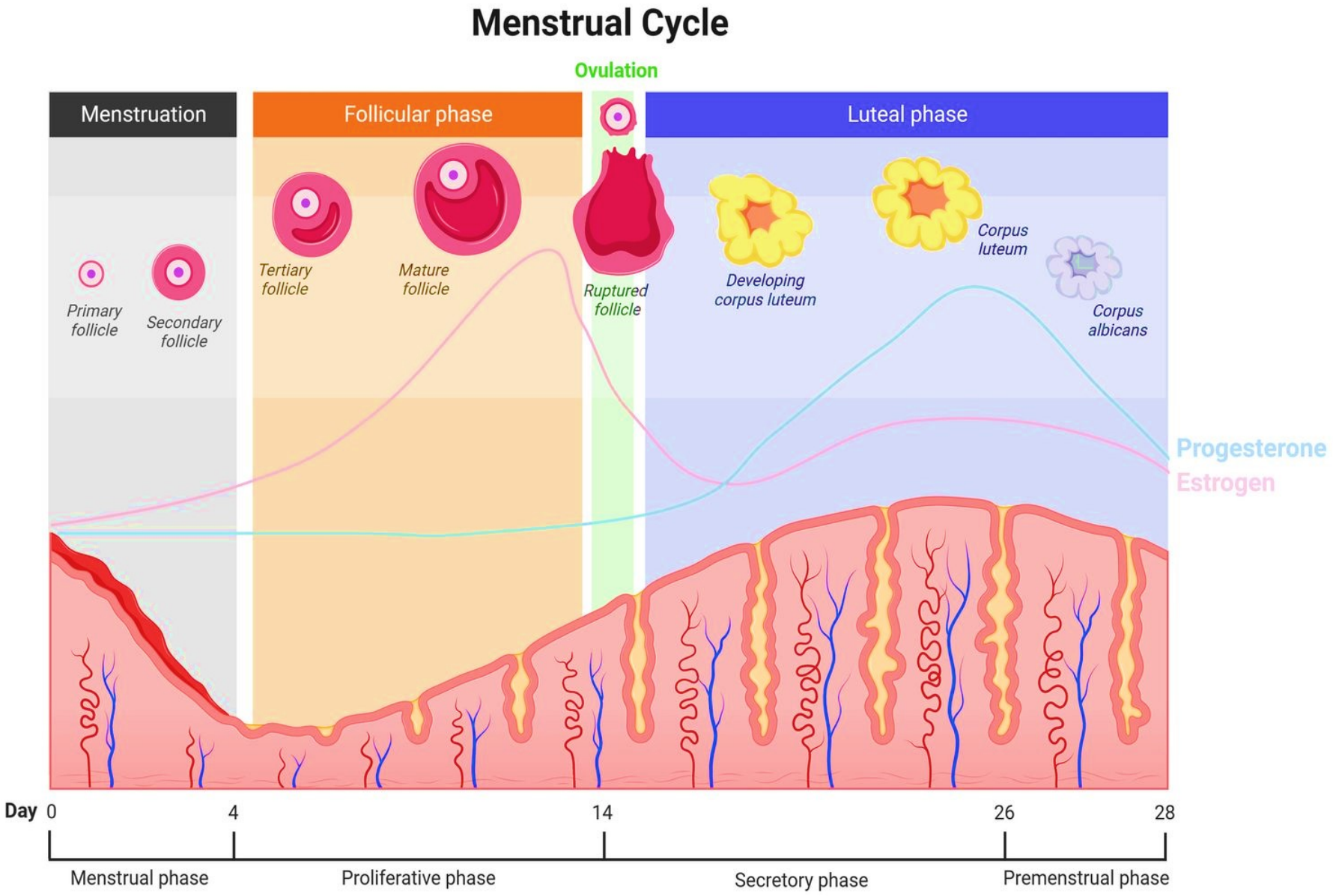
1. Race
2. Body weight
3. Medical conditions
4. Family history

- ✓ The first day of menses is referred to **day 1** of the menstrual cycle and marks the beginning of the **follicular phase**. The follicular phase continues until ovulation, which typically occurs on day 14.
- ✓ The time after **ovulation** is referred to as the **luteal phase**, which lasts until the beginning of the next menstrual cycle.
- ✓ The median menstrual cycle length is 28 days, but it can range from 21 to 40 days

Menstrual Cycle






Menstrual Cycle
Ovulation
Menstruation
Follicular phase
Luteal phase
Primary follicle
Secondary follicle
Tertiary follicle
Mature follicle
Ruptured follicle
Developing corpus luteum
Corpus luteum
Corpus albicans
Progesterone
Estrogen
Day 0
4
14
26
28
Menstrual phase
Proliferative phase
Secretory phase
Premenstrual phase

Non pharmacological therapy

1. **Periodic Abstinence:** avoiding sexual intercourse during the days of the menstrual cycle when conception is likely to occur.

2. **Barrier Techniques:** These methods include condoms, diaphragms, cervical caps. A major disadvantage is higher failure rates than with most hormonal contraceptives.

3. **Surgery**: Female sterilization (tubal occlusion), Male sterilization (vasectomy)

Pharmacological therapy

Hormonal contraceptive

1. **Spermicides → chemical surfactants**
2. **Oral contraceptives**

→ Contain combination of estrogen and progestin, or progestin alone.

→ Work primarily before fertilization to prevent conception.

3. **Parenteral contraceptives**
4. **Implemented devices**
5. **Others : transdermal patches**

MECHANISM

✓**Estrogens** suppress FSH release from the pituitary, which may contribute to blocking the LH and preventing ovulation.

→ Two synthetic are available in the United States, ethinyl estradiol (EE) and mestranol (up to 30 mcg/day, 50 mcg/day if drugs interaction, acne, absence of bleeding).

✓**Progestins** provide most of the contraceptive effect by **thickening cervical mucus** to prevent sperm penetration, slowing tubal motility and delaying sperm transport.

→ Include drospirenone, **levonorgestrel**, norgestimate, norethindrone and others.

TYPES

A- Monophasic pills: contain a **constant dose** of estrogen and progestin given over 21 day, followed by 7 days of placebo pills.

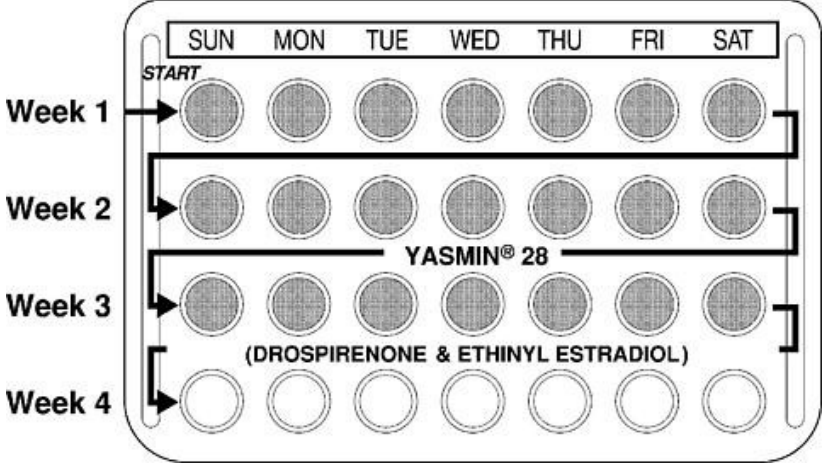
B- Biphasic and triphasic pills: contain **constant** amounts of **estrogen** and **increasing** dose of **progestin** given over 2, 3 successive 10,7 days, also followed by a 7-day placebo phase

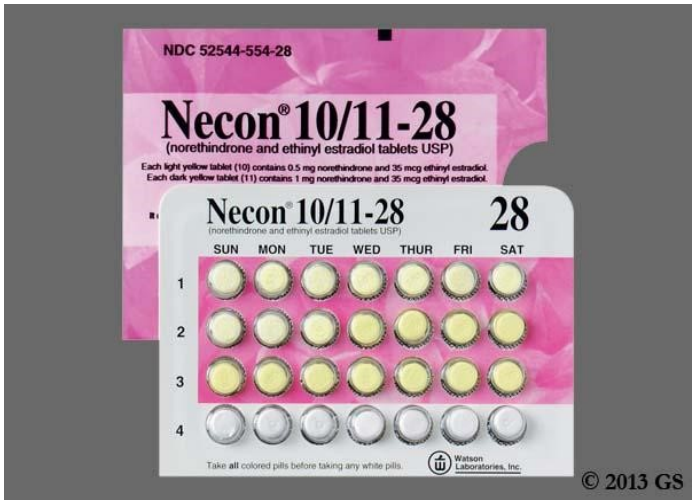
C- Extended-cycle pills : increase the number of hormone-containing pills from 21 to 84 days, followed by a 7-day placebo phase, or low dose of estrogen, resulting in four menstrual cycles per year**.**

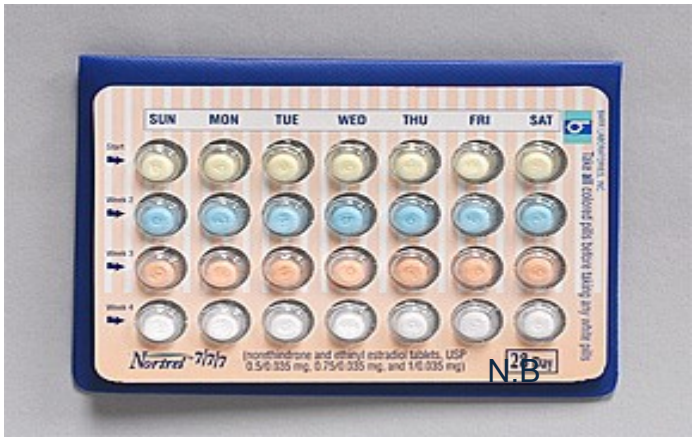
→ Seasonique ® (EE + Levonorgestrel)

D- Progestin only pills: breast feeding women, safer in women with migraine, thromboembolic, poorly controlled HTN, DM, vascular disease, smokers and over 35 years. Eg: Micronor ®

Type of oral contraceptive	Example (in micrograms)
Monophasic	**Yasmin ®** Ethinyl estradiol 30 Drospirenone 3
Biphasic	**Necon® 10/11** Day 1-10 Ethinyl estradiol 0.035 Norethindrone **0.5** Day 11-21 Ethinyl estradiol 0.035 Norethindrone **1.0**
Triphasic	**NORTREL® 7/7/7** Day 1-7 Ethinyl estradiol 0.035 Norethindrone **0.5** Day 8-14 Ethinyl estradiol 0.035 Norethindrone **0.75** Day 15-21 Ethinyl estradiol 0.035 Norethindrone **1.0**







N.B

Emergency Hormonal Contraception

- Emergency hormonal contraception (EHC) is one of only a handful of deregulated products, which targets preventative health care and fits with UK government public health policy.
- Community pharmacists are now the main provider of EHC, and studies have consistently demonstrated that women obtain EHC more quickly from community pharmacies than from other providers.
- Two products are now available OTC in the UK for emergency contraception; **levonorgestrel** (deregulated in 2001) and **ulipristal** (deregulated in 2015).

Mechanism Of Action

Levonorgestrel

- The exact mechanism of action for levonorgestrel is not clear.
- *It appears to have more than one mode of action at more than one site.*

1- It is thought to work mainly by **preventing ovulation and fertilization** if intercourse has taken place in the preovulatory phase.

2- It is also suggested that it causes endometrial changes that **discourage egg implantation**.

Ulipristal

→ Inhibiting or delaying ovulation via suppression of the luteinizing hormone surge.

Evidence base for over- the- counter medication

- Trial data for **levonorgestrel** have found it to prevent 86% of expected pregnancies when treatment was initiated within 72 hours.
- *Levonorgestrel is more effective the earlier it is taken after unprotected sex;*

→ it prevents 95% of pregnancies if taken within 24 hours,

→ 85% between 24 and 48 hours,

→ and 58% if used within 48 to 72 hours.

- Data from two trials for **ulipristal** show:

→it to have **similar efficacy** to levonorgestrel between 0 and 72 hours after unprotected intercourse or contraceptive failure.

→When these data are pooled ulipristal shows **superior** efficacy over levonorgestrel **at 24, 72 and 120 hours.**

Table 11.2
Practical prescribing: Summary of medicines for EHC

Name of medicine	Use in children	Likely side effects	Drug interactions of note	Patients in which care is exercised	Pregnancy & breastfeeding
Levonelle One-Step	>16 years	Nausea, headache, disturbed menstrual cycle	Anticonvulsants, rifampicin, griseofulvin, St. John's Wort and ciclosporin	Conditions in which absorption may be impaired, for example, Crohn's disease	Pregnancy – not applicable Breastfeeding – safe to use
EllaOne	>16 years	Nausea, headache, dizziness and disturbed menstrual cycle	Anticonvulsants, rifampicin, St. John's Wort and ritonavir	None	Pregnancy – not applicable Breastfeeding – avoid for 1 week

CYSTITIS

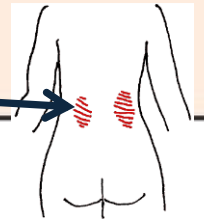
- ✓Cystitis literally means inflammation of the bladder
  → *in practice urethra and bladder*.
- ✓ In men cystitis is uncommon because of the longer urethra, which provides a greater barrier to bacteria entering the bladder; fluid from the prostate gland also confers some antibacterial property (*in men under the age of 50)*.
- ✓ *After 50 years of age urinary tract infections in men become more common due to prostate enlargement*.
- Recurrent cystitis (usually defined as three episodes in the past 12 months or two episodes in the past 6 months) is relatively common.

Aetiology

- The most common bacterial organisms implicated in cystitis are Escherichia coli (>80% of cases), Staphylococcus (up to 10%) and Proteus.
- Infection is caused, in the majority of cases, by the patient's own bowel flora that ascend the urethra from the perineal and perianal areas. Bacteria are thus transferred to the bladder where they proliferate.
- *However,* several studies have shown that up to 50% of women do not have positive urine cultures according to traditional criteria (> 10^5 bacteria per mL of urine), although they do have signs and symptoms of infection. These patients with 'low count bacteriuria' are classed as having a urinary tract infection.

Table 5.2
Specific questions to ask the patient: Cystitis

Question	Relevance
Duration	Symptoms that have lasted longer than 5 to 7 days should be referred because of the risk that the person might have developed pyelonephritis
Age of the patient	Cystitis is unusual in children and should be viewed with caution. This might be a sign of a structural urinary tract abnormality. Referral is needed Elderly female patients (>70 years) have a higher rate of complications associated with cystitis and are therefore best referred
Presence of fever	Referral is needed if the person presents with fever associated with dysuria, frequency and urgency, as fever is a sensitive indicator of an upper urinary tract infection
Vaginal discharge	If a patient reports vaginal discharge then the likely diagnosis is not cystitis but a vaginal infection
Location of pain	Pain experienced in the loin area suggests an upper urinary tract infection



Arriving At A Differential Diagnosis

→The majority of patients who present in the community pharmacy will have acute uncomplicated cystitis and accurately made a self-diagnosis.

→ *Occurs in women who have normal structure and function of the genitourinary tract, with no risk factors, and a Community-Acquired Microorganism*

→The pharmacist's aims are to confirm a patient self-diagnosis, **rule out** upper urinary tract infection (pyelonephritis) and identify patients who are at risk of complications

Clinical Features Of Acute Uncomplicated Cystitis

- Pain when passing urine and causes frequency, urgency, nocturia and haematuria.
- Patient might report only passing small amounts of urine, with pain worsening at the end of voiding urine.
- Symptoms usually start suddenly.
- Suprapubic discomfort is NOT common.
- Haematuria, although common, should be viewed with caution because it might indicate stones or a tumor. Such cases are best referred.

Conditions To Eliminate

Pyelonephritis

- ✓ The most frequent complication by ascending from the bladder to these higher anatomical structures.
- ✓ The patient will show signs of systemic infection such as fever, chills, flank or loin pain and possibly nausea and vomiting.

Sexually transmitted diseases

- ✓ STD can be caused by a number of pathogens, for example Chlamydia trachomatis and Neisseria gonorrhoea.
- ✓ Symptoms tend to be more gradual in onset and last for a longer period of time, pyuria (pus in the urine} is usually present.

Oestrogen deficiency (atrophic vaginitis)

- ✓ Postmenopausal women experience thinning of the endometrial lining as a result of a reduction in the levels of circulating oestrogen in the blood.
- ✓ This increases the likelihood of irritation or trauma leading to cystitis symptoms

Conditions To Eliminate (continued)

Medicine induced cystitis

- ✓ Non-steroidal anti-inflammatory agents (NSAIDs), allopurinol, danazol and cyclophosphamide have been shown to cause cystitis.

Vaginitis

- ✓ Vaginitis exhibits similar symptoms to cystitis, in that dysuria, nocturia, and frequency are common.
- ✓ It can be caused by direct irritation (e.g. use of vaginal sprays)
- ✓ All patients should be questioned about an associated vaginal discharge.
- ✓ The presence of vaginal discharge is highly suggestive of vaginitis and referral is needed.

TRIGGER POINTS indicative of referral: Cystitis

- Children under 16
- Diabetics
- Duration longer than 7 days
- Haematuria
- Immunocompromised
- (Men)
- Patients with associated fever and flank pain
- Pregnancy
- Vaginal discharge
- Women older than 70

Table 5.3
Practical prescribing: Summary of medicines for cystitis

Name of medicine	Use in children	Likely side effects	Drug interactions of note	Patients in which care exercised	Pregnancy & breastfeeding
Potassium citrate					
Effercitrate	>1 year*	Gastric irritation	None	Patients taking ACE inhibitors, potassium sparing diuretics and spironolactone	OK
Cystopurin	>6 years*	None			
Sodium citrate					
Cymalon	Not recommended	None reported	None	Patients with heart disease, hypertension or renal impairment	OK
Cystemme					
Canesten Oasis					

*Children should not be treated for UTI by pharmacists as unusual in this age group.
ACE, angiotensin converting enzyme.

Alkalinising agents

Alkalinising agents are used to return the urine pH back to normal thus relieving symptoms of dysuria.

Cranberry juice

Cranberry juice is a popular alternative remedy to treat and prevent urinary tract infections.

VAGINAL DISCHARGE

Background

- ✓ The three most common causes of vaginal discharge are bacterial vaginosis, vulvovaginal candidiasis (thrush) and Trichomoniasis.
- ✓ As THRUSH is the only condition that can be treated OTC, the text concentrates on differentiating this from other conditions.
- Most cases are acute attacks but some women will develop recurrent thrush defined as 4 or more attacks each year.
- The condition is uncommon in prepubertal girls unless they have been receiving antibiotics.
- In adolescents it is the second most common cause of vaginal discharge after bacterial vaginosis.

AETIOLOGY OF THRUSH

- ✓ The vagina naturally produces a watery discharge (physiological discharge), the amount and character of which varies depending on many factors, such as ovulation, pregnancy and concurrent medication.
- ✓ At the time of ovulation, the discharge is greater in quantity and of higher viscosity. Normal secretions have no odour.
- ✓ The epithelium of the vagina contains glycogen, which is broken down by enzymes and bacteria (most notably lactobacilli) into acids. This maintains the low vaginal pH, creating an environment inhospitable to pathogens.
- ✓ The glycogen concentration is controlled by oestrogen production; therefore any changes in oestrogen levels will result in either increased or decreased glycogen concentrations.
- ✓ If oestrogen levels decrease glycogen concentration also decreases, giving rise to an **increased vaginal pH** and making the vagina more susceptible to opportunistic infection such as *Candida albicans; 95%* of thrush cases are caused by *C. albicans*. The remaining cases are caused by *C. glabrata although symptoms are indistinguishable*.

Table 5.4
Causes of vaginal discharge and their relative incidence in community pharmacy

Incidence	Cause
Most likely	Bacterial vaginosis
Likely	Thrush, (medicine-induced thrush)
Unlikely	Trichomoniasis, atrophic vaginitis, cystitis

ARRIVING AT A DIFFERENTIAL DIAGNOSIS

- Bacterial vaginosis has been linked with pelvic inflammatory disease (PID) and the preterm delivery of low-birth-weight infants and C. *trachomatis can cause infertility*.
- *Symptoms of* pruritus, burning and discharge are possible in all three common causes of vaginal discharge. Therefore no one symptom can be relied upon with 100% certainty to differentiate between thrush, bacterial vaginosis and trichomoniasis.

Clinical features of thrush

- The dominant feature of thrush is vulval itching.
- This is often accompanied with discharge (in up to 20% of patients}.
- The discharge has little or no odour and is curd- like (almost like cottage cheese).
- Symptoms are generally acute in onset.

Table 5.5
Specific questions to ask the patient: Vaginal discharge

Question	Relevance
Discharge	Any discharge with a strong odour should be referred. Bacterial vaginosis is associated with a white discharge that has a strong fishy odour and trichomoniasis is malodorous with a green-yellow discharge. By contrast, discharge associated with thrush is often described as 'curd-like' or 'cottage cheese-like' with little or no odour
Age	Thrush can occur in any age group, unlike bacterial vaginosis and trichomoniasis, which are rare in premenarchal girls. In addition, trichomoniasis is also rare in women aged over 60
Pruritus	Vaginal itching tends to be most prominent in thrush compared with bacterial vaginosis and trichomoniasis where itch is slight
Onset	In thrush, the onset of symptoms is sudden, whereas bacterial vaginosis and trichomoniasis onset tends to be less sudden

CONDITIONS TO ELIMINATE

BACTERIAL VAGINOSIS → Approximately HALF of patients will experience a thin white discharge with a strong fishy odour.

TRICHOMONIASIS → Profuse, frothy, greenish-yellow and malodorous discharge accompanied by vulvar itching is typical. Other symptoms can include vaginal spotting, dysuria and urgency.

CYSTITIS-- > Dysuria and external discomfort (Mentioned before)

ATROPHIC VAGINITIS → It is uncommon in postmenopausal women, and should be referred to rule out malignancy.

MEDICINE-INDUCED THRUSH → Broad-spectrum antibiotics, corticosteroids, immunosuppressants and medication affecting the oestrogen status of the patient (oral contraceptives, Hormone replacement therapy (HRT), tamoxifen and raloxifene) can predispose women to thrush.

DIABETES → *H*yperglycaemia can enhance production of protein surface receptors on *C. albicans* organisms. This hinders phagocytosis by neutrophils, thus making thrush more difficult to eliminate.

PREGNANCY → Hormonal changes during pregnancy will alter the vaginal environment

CHEMICAL AND MECHANICAL IRRITANTS → Ingredients in feminine hygiene products, can precipitate attacks of thrush by altering vaginal pH.

TRIGGER POINTS indicative of referral: Thrush

Symptoms/signs	Possible danger/ reason for referral
Discharge that has a strong smell	Suggests bacterial vaginosis or trichomoniasis
Diabetics	Might suggest poor diabetic control
OTC medication failure Patients predisposed to thrush Recurrent attacks	Suggests underlying problem or misdiagnosis
Women under 16 and over 60	Thrush unusual in these age groups

Table 5.6
Practical prescribing: Summary of medicines for thrush

Name of medicine	Use in children	Likely side effects	Drug interactions of note	Patients in which care exercised	Pregnancy & breastfeeding
Imidazoles	Not applicable	Vaginal irritation	None	None	OK but pregnant women should be referred OK in breastfeeding
Fluconazole		GI disturbances	Anticoagulants, ciclosporin, rifampicin, phenytoin, tacrolimus		Avoid

- **Topical imidazoles** and one systemic triazole (fluconazole) are available OTC to treat vaginal thrush. They are potent and selective inhibitors of fungal enzymes necessary for the synthesis of ergosterol, which is needed to maintain the integrity of cell membranes.
- Imidazoles and triazoles have proven and comparable efficacy with clinical cure rates between 85 and 90%.
- Additionally, cure rates between single or multiple dose therapy and multiple day therapy show no differences.
- Treatment choice will therefore be driven by patient acceptability and cost.

PRIMARY DYSMENORRHOEA (PERIOD PAIN)

- Menstruation spans the years between menarche to menopause.
- Typically this will last 30 to 40 years, starting around the age of 12 and ceasing around the age of 50.
- The menstrual cycle usually lasts 28 days but this varies and it can last anything between 21 and 45 days.
- Menstruation itself lasts between 3 and 7 days. Individuals can also exhibit differences in menstrual cycle length and blood flow.
- Dysmenorrhoea is usually categorised as primary or secondary
  - → **Primary dysmenorrhoea (PD)** is defined as menstrual pain without organic pathology
  - → **Secondary dysmenorrhoea** an identifiable pathologic condition can be identified.

AETIOLOGY

- ✓ Overproduction of uterine prostaglandins E are major contributory factors in causing painful cramps.
- ✓ Prostaglandin production is controlled by progesterone and before menstruation starts.
- ✓ Progesterone levels decrease allowing prostaglandin production to increase, and if overproduced cramps occur.
- ✓ Ovulation inhibition can also improve symptoms (by using the oral contraceptive pill) as it lessens the endometrial lining of the uterus

  →Reducing menstrual fluid volume

  →Reducing prostaglandin production.

- ✓ The main consideration of the community pharmacist is to exclude conditions that have a pathologic cause (secondary dysmenorrhoea).

Table 5.9
Specific questions to ask the patient: Primary dysmenorrhoea

Question	Relevance
Age	PD is most common in adolescents and women in their early twenties. Secondary dysmenorrhoea usually affects women many years after the menarche, typically after the age of thirty
Nature of pain	A great deal of overlap exists between PD and secondary dysmenorrhoea but generally PD results in cramping whereas secondary causes are usually described as dull, continuous diffuse pain
Severity of pain	Pain is rarely severe in PD; the severity decreases with the onset of menses. Any patient presenting with severe lower abdominal pain should be referred
Onset of pain	PD starts very shortly before or within 24 hours of the onset of menses and rarely lasts for more than 3 days. Pain associated with secondary dysmenorrhoea typically starts a few days before the onset of menses

- A typical presentation of PD is of lower abdominal cramping pains shortly before (6 hours) and for 2 or possibly 3 days after the onset of bleeding.
- Commonly associated symptoms include fatigue, back pain, nausea and/or vomiting and diarrhoea.

Conditions To Eliminate

1. **Secondary dysmenorrhoea**

   (e.g. Endometriosis simply means presence of endometrial tissue outside of the uterus).

2. **Pelvic inflammatory disease**

   PID is an important cause of infertility and ectopic pregnancy with many women being asymptomatic and only diagnosed during infertility investigation.

3. **Dysfunctional uterine bleeding**

   Dysfunctional uterine bleeding is a non-specific medical term defined as abnormal uterine bleeding that is not due to structural or systemic disease and includes conditions such as amenorrhoea (lack of menstruation) and menorrhagia (heavy periods); with the majority of cases attributable to menorrhagia.

TREATMENT

a) Non-steroidal anti-inflammatories
b) Hyoscine butylbromide (Buscopan)
c) Low-dose combined oral contraceptives
d) <u>Other treatment options:</u>

→A number of alternative treatments have been tested in PD, most notably transcutaneous electrical nerve stimulation (TENS), acupuncture, exercise and dietary supplements.

→ Of these, high frequency TENS appears to have the strongest body of evidence to support its use (wide range of dietary intervention is frequently recommended and includes vitamin B and E, fish oils and magnesium.

TRIGGER POINTS Indicative of referral: Primary dysmenorrhoea

- Heavy or unexplained bleeding
- Pain experienced before menses
- Pain that increases at the onset of menses
- Signs of systemic infection (e.g. fever, malaise)
- Vaginal bleeding in postmenopausal women
- Women over the age of 30 with new or worsening symptoms

HINTS AND TIPS BOX 5.3: PRIMARY DYSMENORRHOEA

Hot water bottles	The application of warmth to the lower abdomen may confer some relief of the pain

Table 5.10
Practical prescribing: Summary of medicines for primary dysmenorrhoea

Name of medicine	Use in children	Likely side effects	Drug interactions of note	Patients in which care exercised	Pregnancy & breastfeeding
Ibuprofen	Not recommended	GI discomfort, nausea and diarrhoea	Lithium, anticoagulants, methotrexate	Elderly (increased risk of side effects)	Not applicable in pregnancy as patients do not menstruate when pregnant. NSAIDs OK in breastfeeding but avoid hyoscine if possible due to lack of data
Naproxen					
Diclofenac					
Hyoscine		Dry mouth, sedation and constipation	Other anticholinergics, e.g. TCAs	Glaucoma	

PREMENSTRUAL SYNDROME

- ✓ Premenstrual syndrome (PMS) is a broad term that encompasses a wide range of symptoms - both **physical and psychological**.
- ✓ Symptoms range from mild to very severe (5% of patients)

- ✓ The precise pathophysiology of PMS is still unclear.
- ✓ A number of theories have been put forward, for example excess oestrogen, a lack of progesterone or ovarian function.
- ✓ Most researchers now believe PMS is a **complex interaction** between ovarian steroids and the neurotransmitters serotonin and GABA.

Table 5.11
Specific questions to ask the patient: Premenstrual syndrome

Question	Relevance
Onset of symptoms	Symptoms that are experienced 7 to 14 days before, and that disappear a few hours after the onset of menses, are suggestive of PMS
Age of patient	PMS is most common in women aged in their 30s and 40s
Presenting symptoms	Patients with PMS will normally have symptoms suggestive of mental health disorders such as low mood, insomnia and irritability. This can make excluding mental health disorders such as depression difficult. However, the cyclical nature of the symptoms in conjunction with symptoms such as breast tenderness, bloatedness and fluid retention point to PMS

Primary dysmenorrhoea

✓Key distinguishing features between PMS and primary dysmenorrhoea are the lack of behavioral and mood symptoms in primary dysmenorrhoea and the difference in timing of symptoms in relation to the menstrual cycle.

Mental health disorders

✓ Depression and anxiety symptoms are **not cyclical** and are not associated with other symptoms of PMS such as breast tenderness and bloatedness.

Table 5.12
Common symptoms of PMS

Physical	Behavioural	Mood
Swelling	Sleep disturbances	Irritability
Breast tenderness	Appetite changes	Mood swings
Aches	Poor concentration	Anxiety/tension
Headache	Decreased interest	Depression
Bloating/weight	Social withdrawal	Feeling out of control

Table 5.13
Practical prescribing: Summary of medicines used in premenstrual syndrome

Name of medicine	Use in children	Likely side effects	Drug interactions of note	Patients in which care exercised	Pregnancy & breastfeeding
Pyridoxine	Not applicable	Very high doses can cause toxicity (>500 mg daily)	Levodopa when administered alone	None	Not applicable in pregnancy as patients do not menstruate when pregnant. OK in breastfeeding
Calcium		Nausea and flatulence	None	Renally impaired patients	

INTERACTIONS OF CALCIUM:

If the patient is taking tetracycline antibiotics or iron then a 2-hour gap should elapse between doses to avoid decreased absorption of the antibiotic or iron

HEAVY MENSTRUAL BLEEDING (MENORRHAGIA)

- ✓ Excessive menstrual blood loss which interferes with a woman's physical, social, emotional and/or material quality of life, and which can occur alone or in combination with other symptoms'.

Aetiology

Identifiable causes can result from uterine and pelvic pathology (e.g. fIbroids, polyps and carcinoma), systemic disorders (e.g. hypothyroidism) and iatrogenic factors (e.g. medication and intrauterine devices).

Clinical features of HMB

- ✓ The key symptom will be blood loss that is perceived to be greater than normal.
- ✓ The patient's bleeding pattern should be the same as during normal menses but heavier.

CONDITIONS TO ELIMINATE

A. Medicine-induced menstrual bleeding

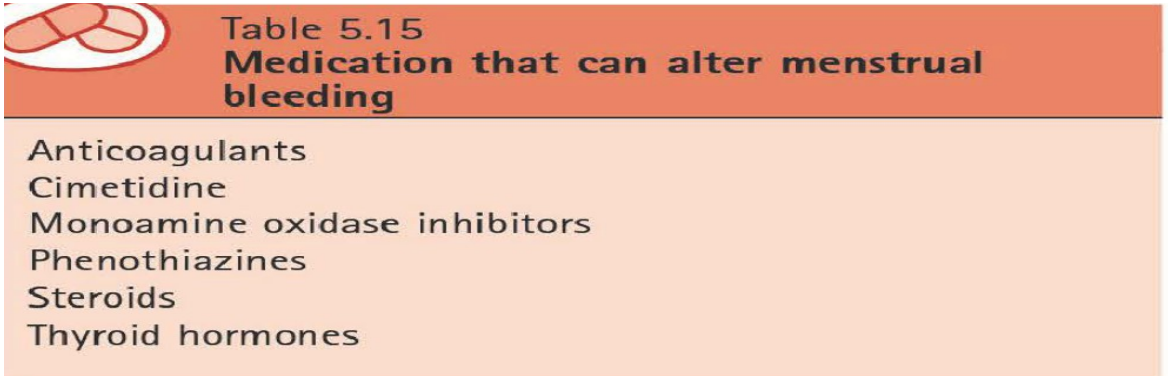


Table 5.15
Medication that can alter menstrual bleeding

Anticoagulants
Cimetidine
Monoamine oxidase inhibitors
Phenothiazines
Steroids
Thyroid hormones

B. Endometrial and cervical carcinoma

- ✓Characterized by inappropriate uterine bleeding, and usually occurs in **postmenopausal women**.
- ✓Bleeding starts as slight and intermittent but over time becomes heavy and continuous.
- ✓Discharge and pain are rare.
- ✓Irregular bleeding between periods, is extremely significant and suggests pre-cancerous/cancer of the cervix.

TRIGGER POINTS Indicative of referral: HMB

- Intermenstrual bleeding
- Pelvic pain
- Postcoital bleeding or postcoital pain
- Treatment failure

Practical Prescribing And Product Selection

- Tranexamic acid is an **antifibrinolytic** and stops the conversion of plasminogen to plasmin - an enzyme that digests fibrin and thus brings about dot dissolution.
- If the patient history suggests no abnormalities then drug treatment can be given.
- Women at high risk of thrombosis have been excluded from pharmacy supply.
- Tranexamic acid should be taken once bleeding starts.
- Side effects are unusual (mild nausea, vomiting and diarrhoea).