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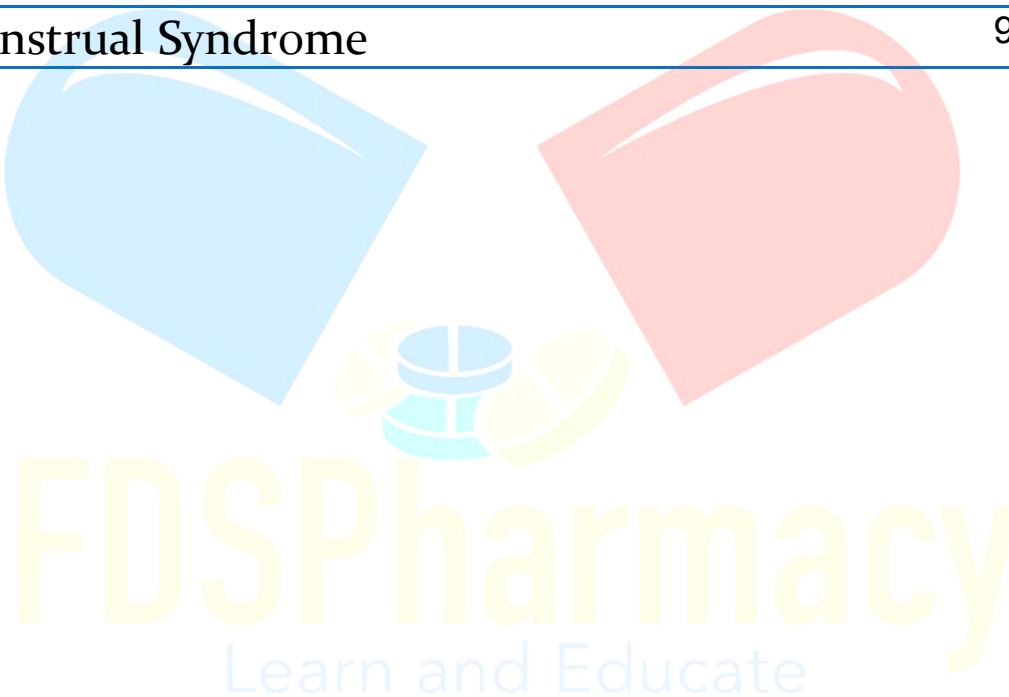
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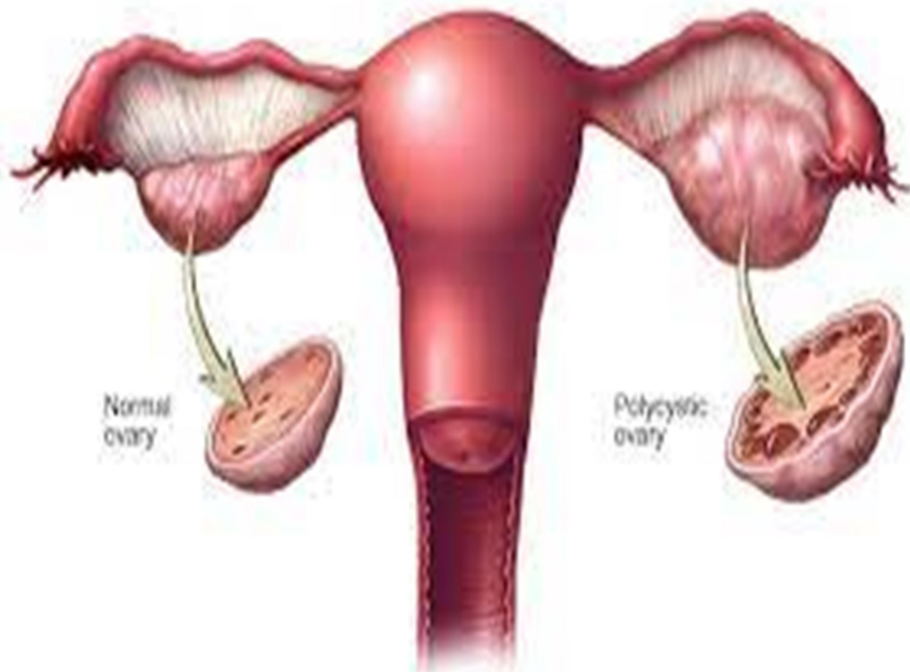
Diploma in Pharmacy 2nd Year
Pharmacotherapeutics
Chapter 2 (m) : Women's Health

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Polycystic Ovary Syndrome (PCOS)

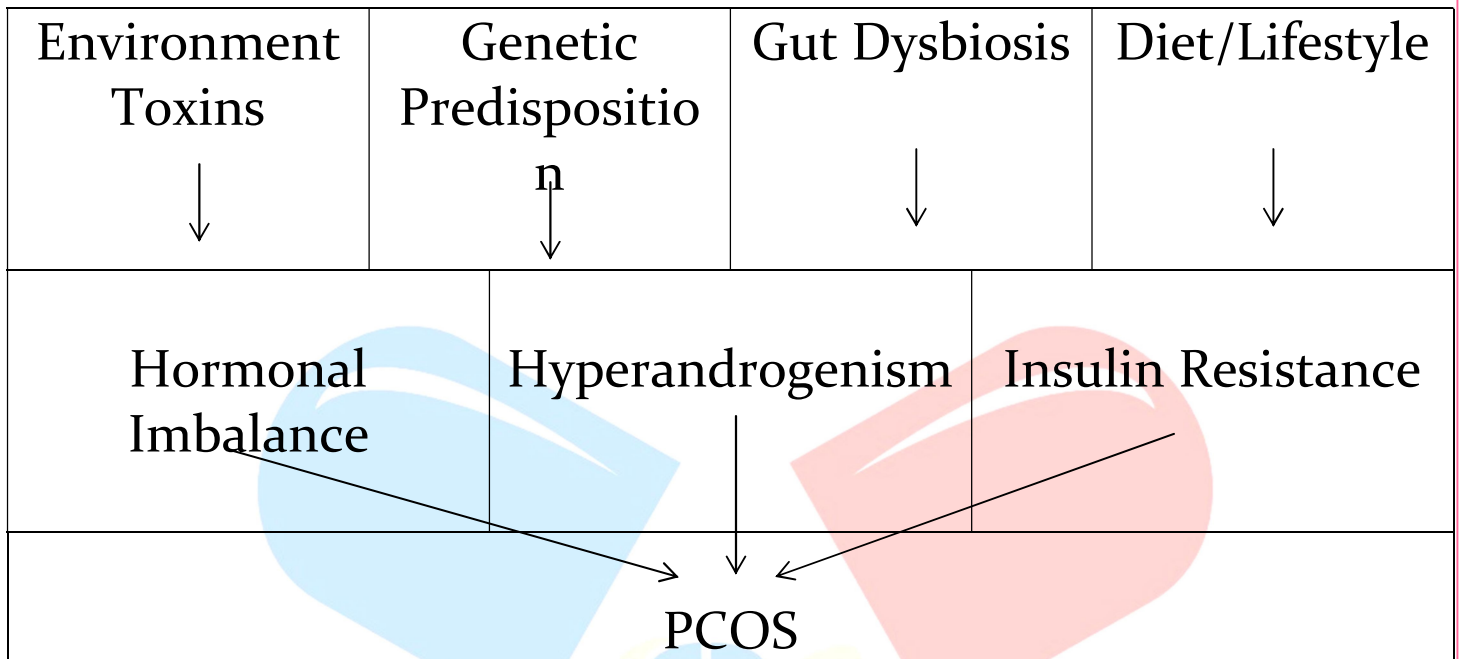
- Polycystic ovarian syndrome (PCOS) is a condition of hormonal imbalance when ovaries (that produces and releases eggs) produce excessive male hormones.
- In PCOS, the ovaries produce abnormally high levels of androgens and cause imbalance in reproductive hormones.
- Thus, PCOS patients experience irregular menstrual cycles, missed periods, and erratic ovulation. Anovulation (lack of ovulation) may lead to the development of small cysts on the ovaries



Etiology

- Genetic
- Environmental factor(climate , diet , pollution , smoking, alcoholism etc)
- High level of androgens (Male hormone : testosterone) it leads to irregular MC and prevent evolution and this can lead to development of cyst .
- Insulin resistance : high level of insulin causes excess production of androgens which cause PCOS .

Pathogenesis



Clinical Manifestation

- ✚ Irregular Periods
- ✚ Abnormal hair growth
- ✚ Acne
- ✚ Obesity
- ✚ Cyst
- ✚ Thinning of hair
- ✚ Infertility

Non Pharmacological Managements

- ❖ Weight loss
- ❖ Low calorie diet
- ❖ Moderate exercise
- ❖ Enough sleep
- ❖ Stress reduction

Pharmacological Managements

- ❖ **Oral contraceptives** : Birth control pills containing a combination of estrogen and progestin can regulate menstrual cycles and reduce androgen levels, which can improve symptoms of PCOS.
- ❖ **Anti-androgens** : Drugs like spironolactone and flutamide : can block the effects of androgens (male hormones) in the body, which can reduce symptoms such as acne and excess hair growth.
- ❖ **Metformin** : This medication is typically used to treat type 2 diabetes, but it can also be helpful for women with PCOS who have insulin resistance. Metformin can help regulate menstrual cycles and lower androgen levels.
- ❖ **Gonadotropins** : Women with PCOS who are trying to conceive may benefit from injections of gonadotropins, which can stimulate ovulation.
- ❖ **Clomiphene citrate** : This medication is an oral fertility drug that can help women with PCOS ovulate and conceive.
- ❖ **Letrozole** : This medication is also used to stimulate ovulation in women with PCOS who are trying to conceive

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Dysmenorrhrea

→ Dysmenorrhoea is a condition of painful menstrual bleeding. In other words, dysmenorrhoea is a condition of painful menstruation having a magnitude that makes performing day-to-day activities difficult for the woman.



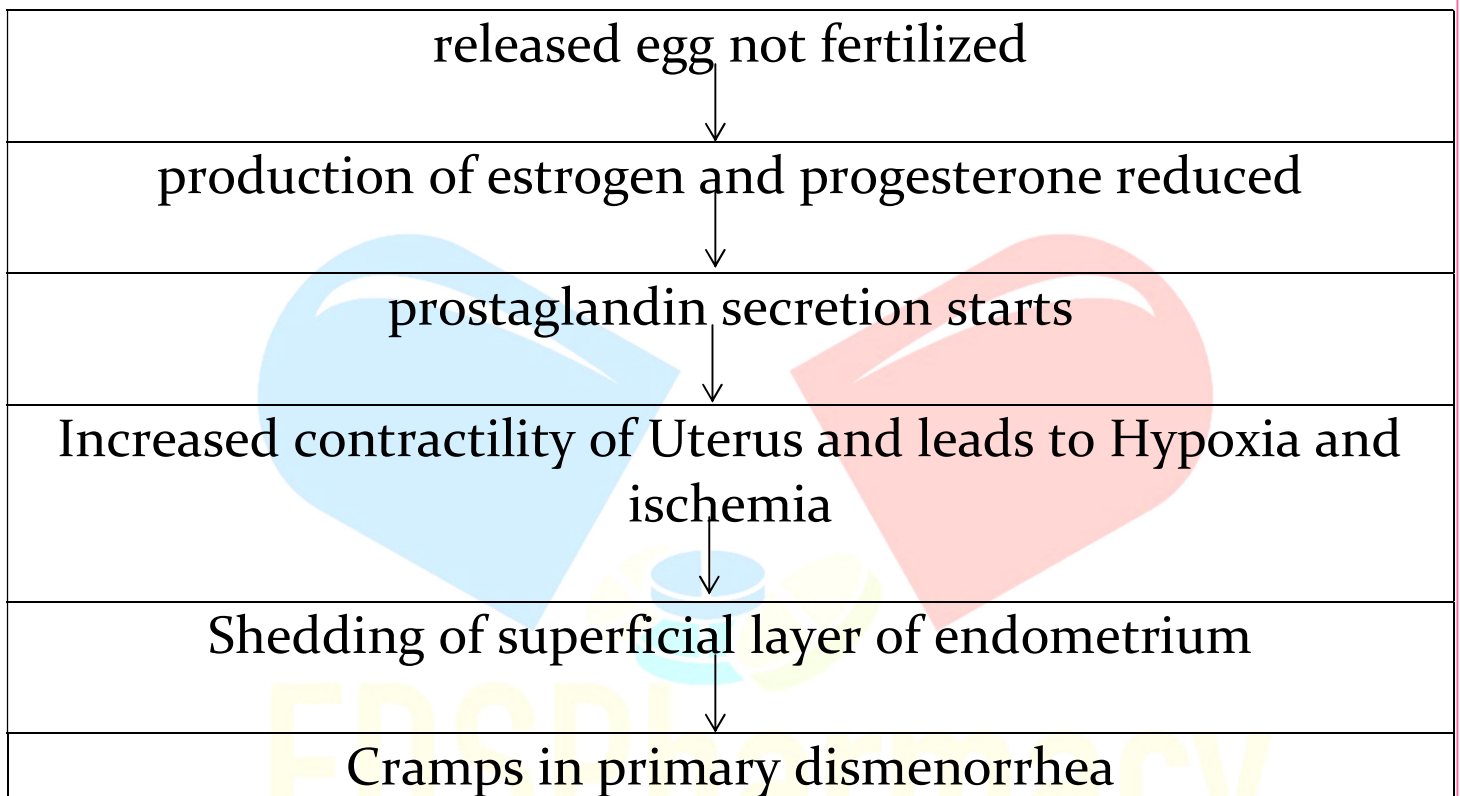
Types

- **Primary Dysmenorrhoea**
 - A condition of reoccurring menstrual cramps is known as primary dysmenorrhoea. This pain may be mild or severe, and generally occurs in the lower abdomen, back, or thighs, 1-2 days prior to regular menstrual bleeding.
- **Secondary Dysmenorrhoea**
 - A condition of pain associated with menstruation, arising in the presence of pelvic pathology is known as secondary dysmenorrhoea.

Etiology

- Heavy menstrual flow
- Passing clots
- Uterine fibroids (uterine tumor)
- Endometriosis
- Constipation
- Cervical stenosis (abnormal narrowing of cervix)
- Pelvic infection (Vagina , Cervix , uterus , bladder , Urethra and rectum)
- Endometriosis .
- Uterine Fibroid

Pathogenesis



Clinical Manifestations

- ✚ Sweating.
- ✚ Weakness, Fatigue.
- ✚ Insomnia.
- ✚ Nausea, Vomiting, Diarrhoea.
- ✚ Back pain.
- ✚ Headache, migraine and tension headaches.
- ✚ Dizziness, and syncope

Non Pharmacological Managements

- ❖ Any symptoms appear then consult with the gynaecologist, and change their life style (sleep and wake up pattern) as per the instruction.
- ❖ Diet pattern is very essential because it maintain the BMR and maintain the body weight.
- ❖ Behavioural changes like (anger, sadness, anxiety) also cause the hormonal balancing, so try to make happy and cheerful.
- ❖ Less consumption of tobacco, alcohol, and caffeine because it increases the production of androgens.
- ❖ Physical activity, yoga and meditation improve the body activity (Physically and mentally). It helps in reducing the stress and anger and maintain the hormonal level.

Pharmacological Managements

- ❖ For reducing the pain and any infection drugs used as
- ❖ NSAIDs. Ex- Ibuprofen, mefenamic acid, naproxen, celecoxib, nimesulide.
- ❖ Oral contraceptive. Ex- Norethindrone, levonorgestrel.

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Premenstrual Syndrome

- Any unpleasant or uncomfortable symptom that arises during the menstrual cycle and may affect the normal body functioning is known as PMS.
- These symptoms are either short (last for hours) or long (last for days) lasting. Their types and intensity differ.

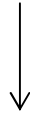


Etiology

- Smoking
- Stress
- Lack of sleep
- Depression
- Too much consumption of alcohol , salt and sugar etc.

Pathogenesis

Latest studies state that abnormalities in ovarian sex steroid (estrogen and progesterone) level induce PMS.



These hormones easily pass through blood brain barrier and their receptors are found in brain(in amygdala and hypothalamus)



so they produce allopregnanolone and pregnanolone high concentration of allopregnanolone and pregnanolone produce anxiolytic ,sedative and anaesthetic effect , when low concentration of allopregnanolone and pregnanolone causes anxiety and unpleasant mood and aggression .

Clinical Manifestations

- ✚ Depression , anxiety , aggression.
- ✚ Bloating . (retention of fluid gas in abdomen)
- ✚ Headache
- ✚ Increased heart rate
- ✚ Muscle spasm
- ✚ Dizziness
- ✚ Nausea and vomiting

Non Pharmacological Managements

- ❖ Exercise
- ❖ Stress management
- ❖ Consumption of salt , caffeine and alcohol should be avoided.

Pharmacological Managements

- ❖ **Antidepressant** : SSRIs (selective serotonin reuptake inhibitors) Fluoxetine , paroxetine etc.
- ❖ **NSAIDs** : Ibuprofen,
- ❖ **Diuretics** : Spironolactone in case of excessive body fluid , salt and bloating (fluid retention and swelling)
- ❖ **Hormonal Contraceptive pills** : These stops ovulation and prevent symptoms of PMS due to Ovulation.



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Amir Khan

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