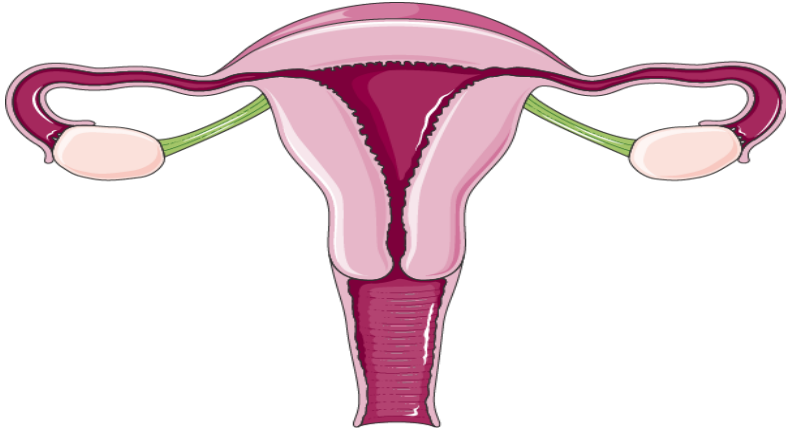




**MEDICINE**  
KING SAUD UNIVERSITY



## Review file

- هذا العمل هو عمل طلابي بحت، يحتمل الصواب والخطأ
- اعتمدنا في هذا العمل على ما نبه عليه أعضاء هيئة التدريس خلال المحاضرة
- هذا العمل ليس للدراسة الأساسية إنما للمراجعة السريعة النهائية
- إن أصبنا فمن الله وإن اخطأنا فمن انفسنا والشيطان قام بهذا العمل: ❖

- اللولو الصليهم
- جواهر ابانمي
- جومانا القحطاني
- روان القحطاني
- ريم الشثري
- شروق الصومالي
- ليلي مذکور
- منيال باوزير
- وجدان الزيد



## Color index

- Doctors' notes
- Drugs names
- Important

# Oral contraceptive

<b>Estrogen :</b> Ethinyl <a href="#">estradiol</a> or <a href="#">mestranol</a> (a prodrug converted to ethinyl estradiol)	<b>Progestins :</b> <b>Has systemic androgenic effect:</b> <a href="#">Norethindrone</a> , <a href="#">Levonorgestrel</a> , <a href="#">Medroxyprogesterone acetate</a> <b>Has no systemic androgenic effect:</b> <a href="#">Norgestimate</a> , <a href="#">Desogestrel</a> , <a href="#">Drospirenone</a>
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**Combined pills (COC) Contains estrogen & progestin (100% effective) :**

M.O.A	<ul style="list-style-type: none"> <li><b><u>Inhibit Ovulation by Suppressing The Release Of Gonadotrophins (FSH &amp; LH)</u></b></li> <li>Increase viscosity of the cervical mucus making it so viscous → no sperm pass</li> <li>Inhibit IMPLANTATION by causing abnormal contraction of the fallopian tubes &amp; uterine musculature → ovum will be expelled rather than implanted.</li> </ul>	
Monthly Pills	<ul style="list-style-type: none"> <li>For 21 days: starting on <b>day 5</b>, ending at day 26.</li> <li>This is followed by a 7 day pill free period</li> <li>To improve compliance: a formulation of 28 pills:                             <ul style="list-style-type: none"> <li>✓ The first 21 pills are of multiphasic formulation</li> <li>✓ Followed by the last 7 pills are actually placebo</li> </ul> </li> </ul>	
Seasonal Pills	<ul style="list-style-type: none"> <li>Taken continuously for 84 days, break for 7 days, Cover 91 days schedule</li> <li>Has very low doses of both estrogens and progestins.</li> </ul>	
	<ul style="list-style-type: none"> <li>❖ <b>Benefit:</b></li> <li>✓ <b><u>It lessens menstrual periods to 4 times a year.</u></b></li> <li>✓ Useful in those who have menstrual <b><u>or menstrual disorders(prevent migraine)</u></b>, and in perimenopausal women <b><u>with vasomotor symptoms(Painful &amp; heavy periods=menorrhagia &amp; dysmenorrhea).</u></b></li> </ul>	<ul style="list-style-type: none"> <li>❖ <b>Disadvantages:</b></li> <li>✓ Higher incidence of breakthrough bleeding</li> <li>✓ spotting during early use.</li> </ul>
Adverse effects	<ul style="list-style-type: none"> <li>Impaired glucose tolerance(hyperglycemia)</li> <li>Increase incidence of breast, vaginal &amp; cervical cancer</li> <li>Cardiovascular (major concern):                             <ul style="list-style-type: none"> <li>○ Thromboembolism , Hypertension</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Weight gain</li> <li>Hirsutism</li> <li>Masculinization (<a href="#">Norethindrone</a>)</li> <li>Menstrual irregularities</li> </ul>
Interactions	<ul style="list-style-type: none"> <li>❖ Medications that <b>cause contraceptive failure :</b> <ul style="list-style-type: none"> <li>Impairing absorption: (e.g. <a href="#">ampicillin</a>)</li> <li>Microsomal Enzyme (CYT P450 ) Inducers (e.g. <a href="#">Phenytoin</a> , <a href="#">Phenobarbitone</a>, <a href="#">Rifampin</a>),</li> </ul> </li> <li>❖ Medications that increase combined oral contraceptive toxicity:                             <ul style="list-style-type: none"> <li>Microsomal Enzyme Inhibitors: (e.g. <a href="#">Acetaminophen</a>, <a href="#">Erythromycin</a>).</li> </ul> </li> <li>❖ Medications <b>altered in clearance of combined oral contraceptive which increase their toxicity:</b> <ul style="list-style-type: none"> <li>(e.g. <a href="#">Warfarin</a>, <a href="#">Cyclosporine</a>, <a href="#">Theophylline</a>).</li> </ul> </li> </ul>	

# Oral contraceptive

## MINI Pills, Progestin-Only Pills (POP)

Note	Contains only a progestin as <a href="#">norethindrone</a> or <a href="#">desogestrel</a> ....
M.O.A	<ul style="list-style-type: none"> <li><b><u>The main effect: increase cervical mucus, so no sperm penetration &amp; therefore, no fertilization.</u></b></li> </ul>
Uses	<ul style="list-style-type: none"> <li><b><u>Are alternative when oestrogen is contraindicated (e.g.: during breast feeding, hypertension, cancer, smokers over the age of 35).</u></b></li> </ul>

## Post Coital Contraception (Emergency Contraception)

Contraception on instantaneous demand, 2<sup>nd</sup>ry to unprotected sexual intercourse

❖ **They are used when desirability for avoiding pregnancy is obvious :**

- Unsuccessful withdrawal before ejaculation
- Torn, leaking condom
- Missed pills
- Exposure to teratogen e.g. Live vaccine
- **Rape**

Composition	Method of Administration	Timing of 1 <sup>st</sup> dose After Intercourse	Reported Efficacy
<b>Ethinyl estadiol<sup>1</sup> + Levonorgestrel<sup>2</sup></b>	2 tablets twice with 12 hrs in between*	0 - 72hrs	75%
High-dose only <b>Ethinyl estadiol</b>	Twice daily for 5 days	0 - 72hrs	75 - 85%
High dose only <b>levonorgestrel</b>	Twice daily for 5 days	0 - 72hrs	70 – 75%
<b>Mifepristone ± Misoprostol</b>	A single dose	0- 120 hrs	100% - 85

<sup>1</sup> Interferes only with ovulation does not cause abortion

<sup>2</sup> causes abortion because it interferes with ovulation and implantation

# Ovulation Induction

Class	Antiestrogens SERMs		GnRH agonists	Gonado-Trophins		D <sub>2</sub> R Agonists
Drug	Clomiphene	Tamoxifen	Leuprolin & Goserelin	Menotropin (hMG) Extracted from Postmenopausal urine <b>(contains LH &amp; FSH).</b>	Pregnyl (hCG) Extracted from pregnant women urine <b>(contains mainly LH).</b>	Bromocriptine (Not a hormone)
MOA	<p>↓ <b>Negative feedback of endogenous estrogen on Hypothalamus and anterior pituitary</b> → ↑ GnRH → ↑ FSH &amp; LH → <b>OVULATION!</b></p>					<p><b>D2 R agonists binds to dopamine receptors</b> in the AP gland → <b>inhibits prolactin secretion.</b></p>
Indication	-Female infertility, <b>due to anovulation or oligoovulation.</b>	Women with PCOS and clomiphene-resistant cases. Estrogen receptor-positive breast cancer.	Female infertility <b>due to hypothalamic amenorrhea GnRH deficient).</b>	Female infertility <b>2ry to Gonadotropin deficiency (pituitary insufficiency).</b>		Female infertility <b>2ndary to hyperprolactinemia.</b>
Administration	Given from <b>5th</b> to 10 <sup>th</sup> day of the cycle. Can not be repeated more than 3 cycles.		Given S.C. in a <b>pulsatile</b> drip to stimulate Gonadotropin (Start from day 2-3 of cycle up to day 10) Given <b>continuously when gonadal suppression is desirable e.g.:</b> <ul style="list-style-type: none"> <li><b>Precocious puberty.</b></li> <li>Breast cancer in women.</li> <li>Prostatic cancer in men.</li> </ul>	I.M. daily starting at day 2-3 of cycle for 10 days.	<b>Given on 10th - 12th day for Ovum retrieval.</b>	
ADRs	<b>High incidence of multiple birth.</b>		Hypoestrogenism : Hot flashes, Osteoporosis	<ul style="list-style-type: none"> <li>❖ FSH :Fever, Ovarian enlargement, Multiple Pregnancy</li> <li>❖ LH: Headache, Edema</li> </ul>		GIT disturbances; nausea, vomiting Dry mouth & nasal congestion

**Treating insulin resistance in PCOS by Metformin will highly increase the possibility of pregnancy.**

# Teratogens and Drugs of Abuse in Pregnancy

Drug	Teratogenic effect
Retinoids: Vitamin A: <b>Isotretinoin</b>	
Sedative and Hypnotics ( <b>Thalidomide</b> )	<ul style="list-style-type: none"> <li>• <b>Phocomelia</b>: shortened or absent long bones of the limbs and absence of external ears</li> </ul>
<b>Phenytoin</b>	<ul style="list-style-type: none"> <li>• <b>Fetal Hydantoin Syndrome</b> Nail &amp; <u>Digital</u> hypoplasia, Oral Clefts (cleft lip and palate), <b>Cardiac Anomalies</b>.</li> </ul>
<b>Valproic acid + Phenytoin</b> <sup>3</sup>	<ul style="list-style-type: none"> <li>• <b>Neural tube defect (spina bifida)</b></li> <li>• Impairs folate absorption.</li> </ul>
Antibiotics ( <b>Tetracycline</b> , <b>Quinolones</b> )	<ul style="list-style-type: none"> <li>• <u>Altered growth of teeth and bones</u></li> <li>• Permanent teeth staining</li> <li>• Enamel hypoplasia</li> </ul>
Anticoagulants ( <b>Warfarin</b> )	<ul style="list-style-type: none"> <li>• <b>Hypoplasia of nasal bridge</b></li> <li>• CNS and CVS malformation</li> </ul>
<b>Corticosteroids</b>	<ul style="list-style-type: none"> <li>• Cleft lip and Palate</li> </ul>
Hormones: * Estrogens * Androgens * <b>Diethylstilbestrol</b>	<ul style="list-style-type: none"> <li>• Serious genital malformation: Testicular atrophy in male fetus, Fetal masculinization in female fetus</li> <li>• Vaginal <u>carcinoma</u> of female offspring</li> </ul>
<b>Lithium</b>	<ul style="list-style-type: none"> <li>• <b>Ebstein's anomaly</b>: <u>Cardiovascular</u> anomalies mainly <b>valvular heart defect involving</b> tricuspid valve</li> </ul>
ACE inhibitor: * <b>Captopril</b> * <b>Enalapril</b>	<ul style="list-style-type: none"> <li>• ACE inhibitors disrupt the fetal renin-angiotensin system, which is essential for normal renal development</li> <li>• They cause renal damage, Fetal &amp; neonatal anuria, <b>Fetal hypotension</b>, <b>Hypoperfusion</b>, Growth retardation</li> </ul>

## Hypertension in Pregnancy

Safe <b>α- methyl dopa, Labetalol</b>	C.I: ACE inhibitors, Angiotensin II receptor blockers, Thiazide diuretics, <b>Propranolol</b> , Calcium channel blockers	Emergency: <b>Hydralazine, Labetalol</b>
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## Coagulation Disorders in Pregnancy

Safe: <b>Heparin</b> (The antidote, <b>protamine sulphate</b> is available)	C.I: <b>Warfarin</b> (Teratogenicity in 1 <sup>st</sup> trimester, bleeding in 2 <sup>nd</sup> and 3 <sup>rd</sup> trimester)
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## Antithyroid Drugs in Pregnancy

SAFE: <b>Propylthiouracil</b>	C.I: <b>Methylthiouracil (Methimazole)</b> , <b>Carbimazol</b> , <b>Radioactive Iodine (I<sup>131</sup>)</b>  Risk of congenital goiter and hypothyroidism
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# Teratogens and Drugs of Abuse in Pregnancy

## Antibiotics in Pregnancy

SAFE:	C.I.:
<b>Penicillin</b> (ampicillin, amoxicillin), <b>Cephalosporins</b> , Macrolides ( <b>erythromycin</b> and <b>azithromycin</b> ): BUT <b>erythromycin estolate</b> should be avoided, bc of the risk of hepatic injury to the mother	<b>Tetracyclines</b> : teeth and <b>bones deformity</b> , <b>Quinolones</b> ( <b>ciprofloxacin</b> ): <b>athropathy</b> (bone and <b>cartilage</b> damage), Aminoglycosides: ototoxicity <b>Sulfanamides</b> : neonatal <b>jaundice-kernicterus</b> <b>Chloramphenicol</b> : <b>gray baby syndrome</b>

## ADRs of Drugs During 2<sup>nd</sup> and 3<sup>rd</sup> Trimesters

Drug	Adverse effect
<b>Tetracyclines</b>	<ul style="list-style-type: none"> <li>Impaired teeth &amp; bone development</li> <li>yellow-brown discoloration</li> </ul>
Aminoglycosides	<ul style="list-style-type: none"> <li>Streptomycin, kanamycin</li> <li>Ototoxicity = 8th (Cranial nerve damage)</li> </ul>
<b>Cloramphenicol</b>	<ul style="list-style-type: none"> <li><b>Gray baby syndrome</b></li> </ul>
<b>Corticosteroids</b>	<ul style="list-style-type: none"> <li>Adrenal atrophy, growth retardation</li> </ul>
<b>Propranolol</b>	<ul style="list-style-type: none"> <li>Bradycardia, neonatal hypoglycemia...</li> </ul>
Antithyroid drugs	<ul style="list-style-type: none"> <li>Risk of neonatal hypothyroidism and goiter</li> </ul>
<b>NSAIDs</b>	<ul style="list-style-type: none"> <li>Constriction of ductus arteriosus (close prematurely), <b>pulmonary hypertension in newborns</b></li> <li><b>Increase in gestation time</b></li> <li>prolong labor, neonatal bleeding</li> <li>Risk of postpartum hemorrhage</li> </ul>
CNS depressants	<ul style="list-style-type: none"> <li>Respiratory depression</li> <li><u>Chronic use (Diazepam)</u>: neonatal dependence and withdrawal symptom</li> </ul>
ACEIs	<ul style="list-style-type: none"> <li>Renal damage</li> </ul>
<b>Warfarin</b>	<ul style="list-style-type: none"> <li><b>Risk of bleeding</b></li> </ul>
<b>Sulfonamides</b>	<ul style="list-style-type: none"> <li><b>neonatal hyperbilirubinemia, Jaundice</b></li> </ul>

## Drug abuse

<b>Alcohol</b>	<ul style="list-style-type: none"> <li><b>The use of alcohol is contraindicated during all trimesters of pregnancy</b></li> <li>The chronic maternal alcohol abuse during early weeks of the 1<sup>st</sup> trimester of pregnancy cause <b>Fetal Alcohol Syndrome (FAS)</b>, which characterized by: <b>Small head, Craniofacial abnormalities. (thin upper lips, small eye opening, smooth philtrum)</b></li> </ul>
<b>Cocaine</b>	<ul style="list-style-type: none"> <li>It decreases blood flow to uterus and fetal oxygenation (Hypoxia).</li> <li><b>Placental abruption</b> (separation of placenta from uterus wall before delivery)</li> </ul>
Tobacco	<ul style="list-style-type: none"> <li>Fetal hypoxia, <b>Low birth weight, Perinatal mortality</b></li> </ul>

# Oxytocin and Tocolytics




## Oxytocin (**Syntocinon**)

M.O.A	<p><b>Effect on uterus:</b>  <u>Clinically oxytocin is given only when uterine cervix is soft and dilated</u></p> <p><b>Effect on Myoepithelial cells:</b>          Oxytocin contracts myoepithelial cells surrounding mammary alveoli in the breast &amp; leads to milk ejection.</p>
P.K	<ul style="list-style-type: none"> <li>Administered I.V. (<b>augment labor</b>) then we monitor its effect on the uterus</li> <li><b>Also as nasal spray (impaired milk ejection)</b></li> </ul>
Uses	<p>Mild preeclampsia near term - Uterine inertia - Incomplete abortion - Post maturity - <b>Maternal diabetes</b></p> <p>Post partum uterine hemorrhage</p> <p><b>Impaired milk ejection, the drug of choice to induce labor At term.</b></p>
ADRs	<p>Maternal death due to hypertension - <b>Uterine rupture</b> - Fetal death (ischemia) - Water intoxication</p>
C.I	<p>Hypersensitivity - Prematurity of the uterus - Abnormal fetal position - Evidence of fetal distress - Cephalopelvic disproportion - Incompletely dilated cervix</p>

## Ergot Alkaloids

Natural (**Ergometrine**)

Synthetics (**Methyl ergometrine**)

M.O.A	<p><b><u>It causes contractions of uterus as a whole i.e. fundus and cervix (tend to compress rather than to expel the fetus)</u></b></p>
Uses	<ul style="list-style-type: none"> <li><b>Post partum hemorrhage (3rd stage of labor)</b></li> <li><b>When to give it? After birth, 3<sup>rd</sup> stage of labor</b></li> </ul>
ADRs	<ul style="list-style-type: none"> <li> Vasoconstriction of peripheral blood vessels ( toes &amp; fingers)</li> <li> Gangrene</li> <li> Hypertension</li> </ul>
C.I	<ul style="list-style-type: none"> <li>Induction of labor: 1<sup>st</sup> and 2<sup>nd</sup> stage of labor</li> <li>vascular disease</li> <li>Severe hypertension</li> </ul>

# Oxytocin and Tocolytics

Prostaglandins	
PGE <sub>2</sub> ( <b>Dinoprostone</b> )	PGF <sub>2</sub> α ( <b>Dinoprost</b> )      synthetic PGE <sub>1</sub> ( <b>Misoprostol</b> )
Uses	<ul style="list-style-type: none"> <li>• Induction of abortion (pathological)</li> <li>• Induction of labor (fetal death in utero)</li> <li>• Postpartum hemorrhage</li> </ul>
ADRS	<ul style="list-style-type: none"> <li>• <b>Bronchospasm (PGF<sub>2</sub>α)=Dinoprost, C.I in asthmatic pregnant</b></li> <li>• <b>Flushing of the face and chest (PGE<sub>2</sub>) bc it causes vasodilatation</b></li> </ul>
C.I.	Mechanical obstruction of delivery, Fetal distress
Preca.	<b>Asthma</b> , Multiple pregnancy, Glaucoma, Uterine rupture

Difference b/w Oxytocin, Ergometrine, and Prostaglandins			
Character	Oxytocin	Ergometrine	Prostaglandins
Contractions	<b>Only at term and it resembles normal physiological contractions</b>	<b>Tetanic contraction; doesn't resemble normal physiological contractions</b>	<b>Contraction through out pregnancy</b>
Cervix	<b>Does not soften the cervix</b>	-	<b>soften the cervix</b>
Uses	<b>Induce and augment labor and postpartum hemorrhage</b>	<b>Only in postpartum hemorrhage</b>	<b>Induce abortion in 2nd trimester of pregnancy and used for induction of labor</b>

Uterine Relaxants (**tocolytic**): Use to **Relax** the **uterus** and **arrest threatened abortion or delay premature labor.**

	<b>β<sub>2</sub>-Adrenoceptor agonists:</b> <b>Ritodrine</b> (1 <sup>st</sup> choice)	<b>Calcium Channel Blockers:</b> <b>Nifedipine</b> (2 <sup>nd</sup> choice)	<b>Compete with oxytocin receptors:</b> <b>Atosiban</b>
M.O.A	<b>Selective β<sub>2</sub> receptor agonist</b> used specifically as a uterine relaxant.	Markedly inhibits the oxytocin-induced contractions	<b>Compete with oxytocin at its receptors on the uterus.</b>
ADRS	<ul style="list-style-type: none"> <li>• <b>Hyperglycemia</b></li> <li>• <b>Hypokalemia</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ankle edema</b></li> <li>• <b>Flushing</b></li> </ul>	



# Hormonal Replacement Therapy

Drug	M.O.A	Uses	ADRs	C.I	
Hormonal	Estrogen	<p>binds with its receptors</p> <p><b>ER α &amp; ER β</b></p> <ul style="list-style-type: none"> <li><b>ER α</b> : mediates female hormonal functions (located in Endometrium, breast, ovaries, hypothalamus,...</li> <li><b>ER β</b>: mediates other hormonal functions. (located in brain, bone, heart, lungs, kidney, bladder, intestinal mucosa, endothelial cells,....)</li> </ul>	<ul style="list-style-type: none"> <li><b>In menopause:</b> <ul style="list-style-type: none"> <li>-Improves <b>vaginal dryness</b></li> <li>- Protects CVS</li> <li>- Controls <b>sleep disturbance &amp; mood swings</b></li> <li>- Improves urethral , urinary symptoms, <b>hot flushes</b> , night sweats, insulin resistance &amp; glycemic control in diabetics</li> <li>- Improves cognitive function</li> <li>- Delays parkinsonism</li> </ul> </li> <li><b>Contraception</b></li> <li><b>Primary ovarian failure</b></li> <li><b>Amenorrhea &amp; Hirsutism</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Irregular vaginal bleeding</b></li> <li><b>Breast tenderness</b></li> <li>Nausea.</li> <li>Vaginal discharge.</li> <li>Fluid retention, Weight gain.</li> <li>Spotting or darkening of skin (on face)</li> </ul>	<ul style="list-style-type: none"> <li>Undiagnosed vaginal bleeding</li> <li>Severe liver disease</li> <li><b>Thromboembolic</b> manifestations</li> <li><b>Cancer</b> in: <b>endometrial, breast ,ovarian</b></li> </ul>
		<p><b>interactions</b></p>	<p>With :contraception</p>	<p><b>SERM ↑side effects for both drugs</b></p>	<p><b>Aromatase inhibitors: ↓ efficacy</b></p>
	Progestins	<p>Progestins are synthetic progestogens that have effects similar to progesterone but are not degraded by GIT</p>	<ul style="list-style-type: none"> <li><b>In menopause:</b> <ul style="list-style-type: none"> <li>-<b>Protects against estrogen induced endometrial cancer</b></li> <li>-<b>protects against breast cancer development</b></li> <li>-Confers neuroprotection</li> <li>-Controls insomnia &amp; depression</li> <li>-Counteract osteoporosis</li> </ul> </li> <li><b>Contraception</b> (Estradiol + Progestins)</li> <li><b>Dysmenorrhea</b></li> <li><b>Menopausal symptoms (Estradiol + Progestins given together) Lady with uterus (estrogen + Progestins), lady without uterus (estrogen)</b></li> </ul>	<ul style="list-style-type: none"> <li>Mood changes e.g. anxiety, irritability.</li> <li>Headache, dizziness, drowsiness</li> <li>Nausea, vomiting, abdominal pain or bloating (distention).</li> <li>Hirsutism, masculinization (Not with new preparations)</li> </ul>	<p><b>we add progestins with estrogen but not if there is hysterectomy</b></p>

# Hormonal Replacement Therapy

Drug	M.O.A	Uses	ADRs	C.I
Hormonal	Raloxifene	Antagonist in breast and uterus and <b>agonist in bone , can be used in primary osteoporosis</b>	<ul style="list-style-type: none"> <li><b>preventing vertebral bone fracture</b></li> <li>be agonistic in brain, bone, cardiovascular system ,vagina &amp; urinary system but antagonistic in breast &amp; uterus</li> </ul>	
	Tamoxifen	<b>Antagonist in breast</b> and partial agonist in bone and endometrium , <b>Can be used in breast cancer with positive ER</b>	<ul style="list-style-type: none"> <li><b>Increase the risk of venous thrombosis</b></li> <li>tends to <b>precipitate</b> vaginal atrophy &amp; <b>hot flushes</b></li> </ul>	
	Phytoestrogens	<ul style="list-style-type: none"> <li>They <b>mimic</b> action of <b>estrogen</b> on estrogen <b>receptor-β</b>:</li> <li>They block actions mediated by estrogen receptor-α in some target tissues</li> </ul>	<ul style="list-style-type: none"> <li>alleviate symptoms related to hot flushes, mood swings, cognitive functions &amp; possess CVS protective actions.</li> <li>lower risks of developing endometrial &amp; breast cancer.</li> </ul>	<b>Avoid in estero-gen dependent breast cancer</b>
	Androgen	N.B. <b>Tibolone</b> , is a synthetic steroid drug with <b>estrogenic</b> , <b>progestogenic</b> , and weak <b>androgenic</b> actions	sole therapy to menopausal women <b>who lack sexual arousal</b> .	
None-Hormonal	Fluoxetine	Selective Serotonin Reuptake Inhibitor (SSRI)	reduces vasomotor symptoms	
	Clonidine	(centrally acting antihypertensive, alpha 2 agonist)	helps with vasomotor symptoms	
	Gabapentin	Anticonvulsant	reduces severity and frequency of hot flushes	

# Hormonal Replacement Therapy

## Benefits and Risks of HRT

Benefits	Risks
<p><b>Definite benefits:</b></p> <ul style="list-style-type: none"> <li><b>Osteoporosis</b> (Definite increase in bone mineral density; probable decrease in risk of fractures)</li> </ul> <p><b>Uncertain benefits:</b></p> <ul style="list-style-type: none"> <li>Cognitive functions</li> </ul>	<p><b>Definite risks:</b></p> <ul style="list-style-type: none"> <li><b>Endometrial cancer (estrogen only)</b></li> <li><b>Venous thromboembolism (long term)</b></li> <li><b>Breast cancer (long term 5 yrs.)</b></li> </ul>

**Note:** the risk of CVS problems and breast cancer with HRT is more than their benefits

## Breast feeding

### Factors Controlling Passage of Drugs into Breast Milk

Related to <b>drug</b>	Related to mother	Related to neonate
<ul style="list-style-type: none"> <li>Molecular weight</li> <li>Lipid solubility</li> <li><b>Drug pH (Acidic drug is safe)</b></li> <li><b>Degree of ionization (Highest is safe)</b></li> <li>Protein binding</li> <li>Half life</li> <li>Oral bioavailability</li> </ul>	<ul style="list-style-type: none"> <li>Dose of the drug</li> <li>Route of administration</li> <li>Time of breast feeding</li> <li>Health status</li> <li>Maternal drug concentration</li> </ul>	<ul style="list-style-type: none"> <li><b>Neonatal hyperbilirubinemia : caused by oxidizing drugs: sulfonamides, trimethoprim, Primaquine</b></li> <li><b>Methemoglobin:</b> oxidized form of hemoglobin cause hypoxia</li> </ul>

Drugs that increase lactation (decrease dopamine)	Drugs that decrease lactation (decrease prolactin)
<ul style="list-style-type: none"> <li><b>Levodopa</b></li> <li><b>Bromocriptine</b></li> <li><b>Estrogen</b></li> <li>Androgens</li> <li>Thiazide diuretics</li> </ul>	<ul style="list-style-type: none"> <li><b>Metoclopramide</b></li> <li><b>Domperidone</b></li> <li><b>Haloperidol</b></li> <li><b>Methyl dopa</b></li> <li><b>Theophylline</b></li> </ul>

Drugs **totally contraindicated** during lactation (breast feeding should be avoided)

- Anticancer drugs e.g. (**Doxorubicin**, **cyclophosphamide**, **methotrexate**)
- Radiopharmaceuticals (**radioactive iodine**)
- CNS drugs (**amphetamine**, **heroin**, **cocaine**)
- Alcohol & **Lithium**
- Chloramphenicol**
- CVS drugs (**Atenolol** & **Sotalol**)
- Potassium iodide**
- Ergotamin**
- Tobacco smoke

# Breast feeding

## Drugs & Breast Feeding

Class	<u>Safe</u>	Avoid
Antibiotics	<ul style="list-style-type: none"> <li>• <u>Cephalosporins</u>,</li> <li>• <u>Penicillin</u></li> <li>• <u>Macrolides (erythromycin)</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Chloramphenicol (gray baby syndrome)</u>,</li> <li>• <u>Quinolones (arthropathy)</u>,</li> <li>• <u>sulphonamides (neonatal jaundice)</u></li> <li>• <u>tetracyclines</u></li> </ul>
Antidiabetics	<ul style="list-style-type: none"> <li>• Insulin</li> <li>• oral antidiabetics</li> </ul>	<ul style="list-style-type: none"> <li>• Metformin</li> </ul>
Anticoagulants	<ul style="list-style-type: none"> <li>• <u>Heparin</u>,</li> <li>• <u>Warfarin (with monitoring of PT)</u></li> </ul>	
Analgesics	<ul style="list-style-type: none"> <li>• <u>Acetaminophen (paracetamol)</u></li> <li>• Ibuprofen</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Asprin (Reye's syndrome)</u></li> </ul>
Antithyroid	<ul style="list-style-type: none"> <li>• Propylthiouracil</li> </ul>	<ul style="list-style-type: none"> <li>• Potassium iodide</li> <li>• Radioactive iodine (C.I)</li> </ul>
Anticonvulsants	<ul style="list-style-type: none"> <li>• Carbamazepine,</li> <li>• Phenytoin</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Lamotrigine</u></li> </ul>
Antidepressants	<ul style="list-style-type: none"> <li>• SSRI (Paroxetine)</li> </ul>	
Sedatives	<ul style="list-style-type: none"> <li>• Barbiturates (<u>phenobarbitone</u>)</li> <li>• Benzodiazepines</li> <li>• Diazepam</li> <li>• Lorazepam</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid <u>chronic</u> use</li> </ul>
Anti-asthmatic	<ul style="list-style-type: none"> <li>• Inhaled corticosteroids, prednisone</li> </ul>	
Antihistaminics	<ul style="list-style-type: none"> <li>• Loratidine (non-sedating)</li> </ul>	<ul style="list-style-type: none"> <li>• Diphenhydramine (sedating)</li> </ul>
Oral contraceptives	<ul style="list-style-type: none"> <li>• <u>Minipills (Progestin only)</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Estrogens Containing Pills</u></li> </ul>

# Treatment of STDs

## Drugs for syphilis

Drug	M.O.A	Uses	ADRs	C.I
<b>Penicillin</b>	inhibit bacterial cell wall synthesis via inhibiting transpeptidase (Bactericidal)  <u>1st line of treatment in syphilis</u>	A) <b>penicillin G</b> : given i.v , short B) <b>Procaine penicillin</b> : i.m • <b>C) Benzathine penicillin: i.m , the best one given due to its long action ( given once every 3-4weeks)</b>	convulsions , hypersensitivity , super infection	who have renal failure/disease
	<b>P.K</b>	Acid unstable	beta lactamase sensitive	
<b>Tetracycline (Doxycycline)</b>	inhibit protein synthesis 30 S ( bacteriostatic)	<u>2ND option in case of syphilis with Penicillin resistance</u>	<ul style="list-style-type: none"> <li>Given with food</li> <li>brown discoloration</li> <li><b>deformity/growth inhibition of bones</b> in children = ( CI : children)</li> <li>hepatic toxicity</li> </ul>	<u>pregnancy, breastfeeding, children</u>
<b>Macrolides (Azithromycin)</b>	inhibit protein synthesis 50 S ( bacteriostatic)	<b>PK</b>  Acid stable, doesn't penetrate CSF, No effect on cytochrome p450	allergic reactions ( urticaria , mild rashes)	
<b>Cephalosporin (Ceftriaxone)</b>	inhibit cell wall synthesis ( Bactericidal)	<b>PK</b>  it is Eliminated via biliary excretion given i.v	thrombophlebitis	

## WHO Guideline instructions for syphilis

<b><u>Pregnant</u></b>	<ul style="list-style-type: none"> <li><b>Benzathine penicillin</b> Gor Procaine penicillin G</li> <li><b>Erythromycin</b> or Ceftriaxone or Azithromycin</li> </ul>
late stages	<ul style="list-style-type: none"> <li>Benzathine penicillin G or Procaine penicillin G</li> <li>Doxycycline (If penicillin is not allowed due to allergy)</li> </ul>
congenital syphilis (infant)	<ul style="list-style-type: none"> <li>Aqueous benzyl penicillin i.v or</li> <li>procain penicillin i.m</li> </ul>

# Treatment of STDs

## Drugs for UNCOMPLICATED gonorrhea

Drug	M.O.A	Uses	ADRs	C.I
Ceftriaxone or cefixime + azithromycin or doxycycline	<u>1st line of treatment</u>	To cover both Chlamydia and gonorrhea, use a combination of: 1. <u>Ceftriaxone or cefixime (3rd generation Cephalosporin) +</u> 2. <u>azithromycin or doxycycline</u>		
Fluoroquinolones (ciprofloxacin / ofloxacin)	It inhibit DNA Gyrase enzyme	<u>2<sup>ND</sup> option in case of UNCOMPLICATED gonorrhea</u>	<ul style="list-style-type: none"> <li>• <u>Arthropathy</u></li> <li>• Phototoxicity</li> </ul>	<ul style="list-style-type: none"> <li>• Pregnancy</li> <li>• nursing mother</li> <li>• children &lt; 18</li> </ul>

# if the pt. Cannot tolerate Cephalosporins or Quinolones we use = spectinomycin

<u>Spectinomycin</u>	<u>Inhibit protein synthesis 30 S</u>		<ul style="list-style-type: none"> <li>• pain at site of injection</li> <li>• Fever</li> <li>• Nephrotoxicity</li> </ul>	
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### treatment of ocular prophylaxis in newborn:

1- silver nitrate : germicidal effects ,used immediately after birth

2- Erythromycin : immediately after birth, used for treatment & prevention

