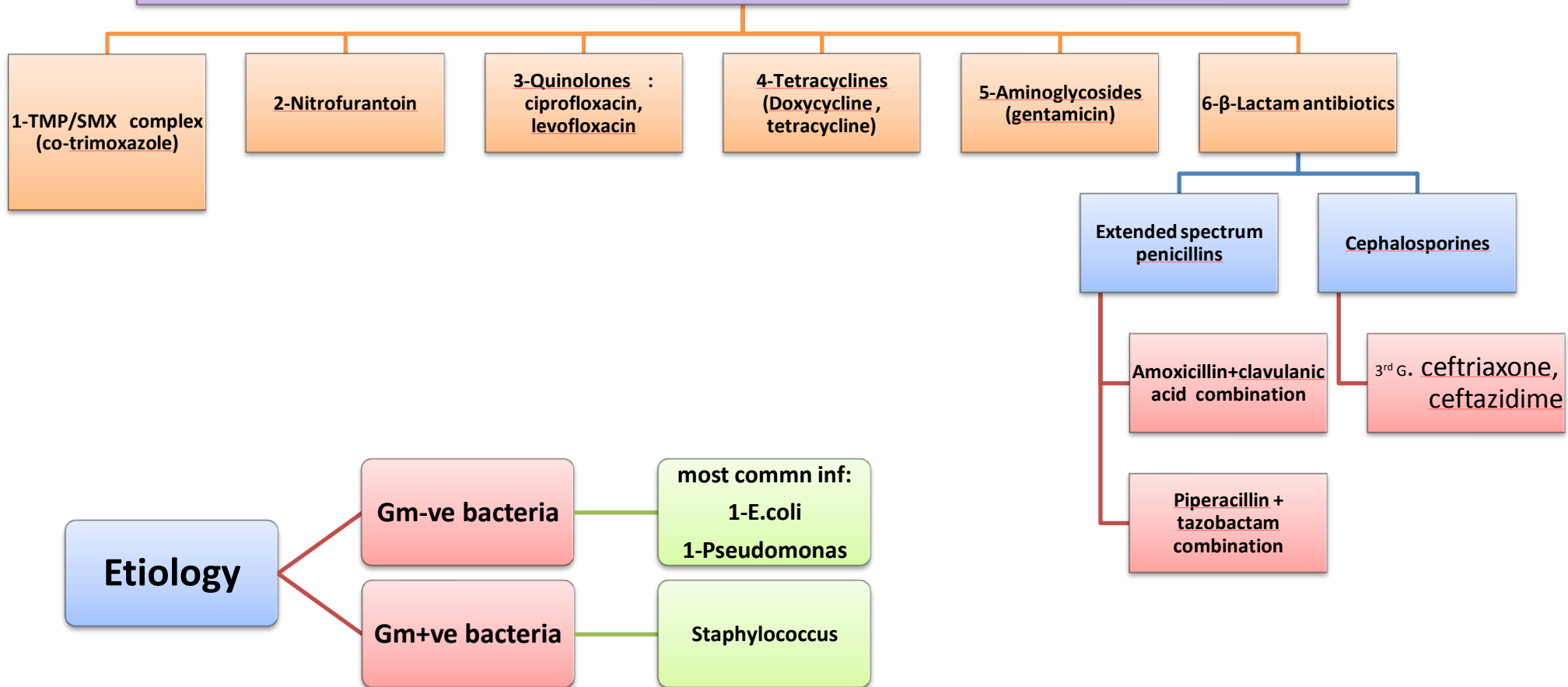


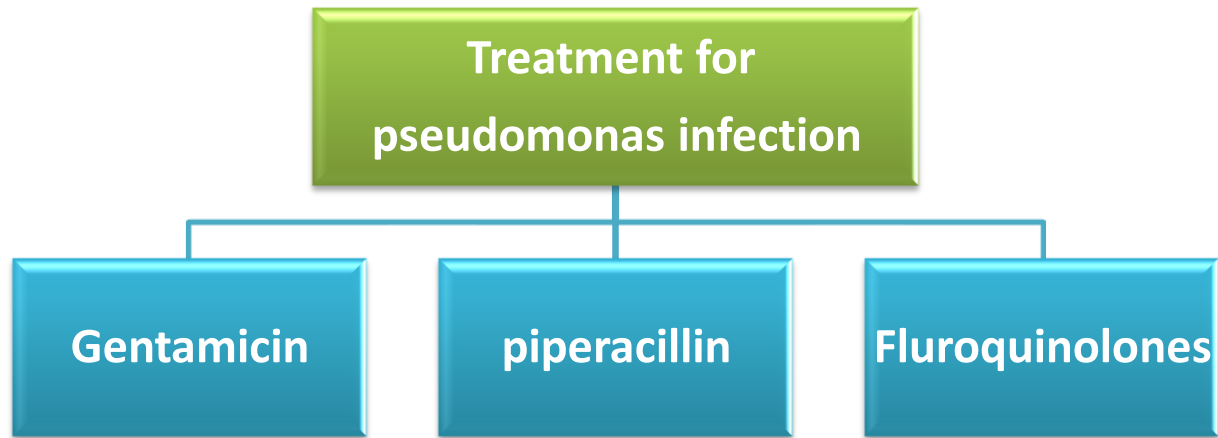
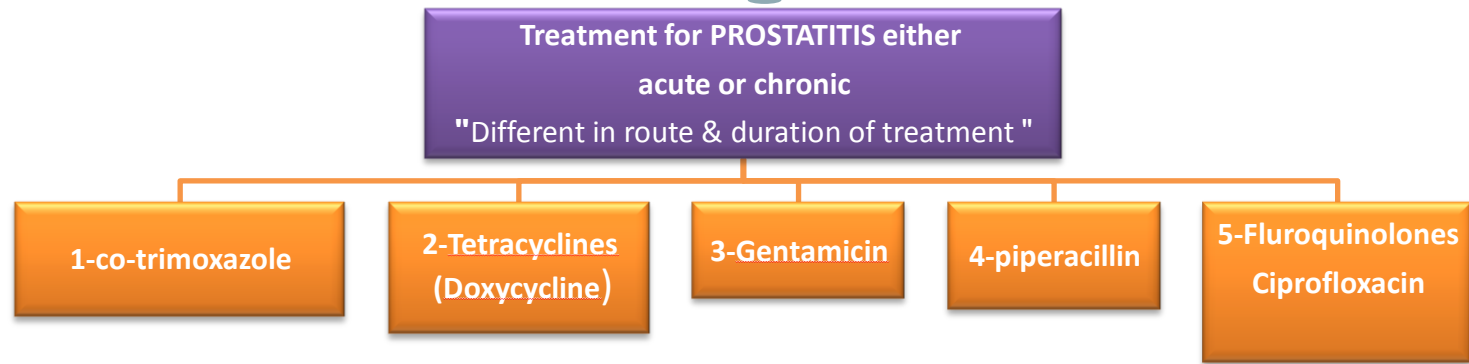
Treatment of Urinary Tract Infections



DRUGS	TMP/SMX complex (co-trimoxazole) MOA: in general the complex acts as bactericidal drug (synergism) by inhibit Dihydrofolate reductase		Nitrofurantoin	Tetracyclines (Doxycycline)
E.G	TMP: Sulfamethoxazole	SMX: Trimethoprim		
MOA	alone is bacteriostatic by inhibiting Dihydropteroate Synthetase	alone is bacteriostatic by inhibiting Dihydrofolate Reductase	No systemic antibacterial action	Broad spectrum antibiotic Bacteriostatic Inhibit protein synthesis by binding reversibly to 30 S subunit
PHARMACOKINETICS	1-given orally 2-Rapidly absorbed from stomach and small intestine. 3-Widely distributed to tissues and body fluids , crossplacenta 4-Bind to serum protein 5-Metabolized in the liver . 6-Eliminated in the urine	1-orally, alone or in combination with SMX 2-Well absorbed from the gut 3-Widely distributed in body fluids & tissues 4-More lipid soluble than SMX 5-Protein bound 6-Excreted in the urine 7-TMP concentrates in the prostatic fluid.	1-Absorption is complete after oral use 2-Metabolized & excreted rapidly that has no systemic antibacterial action 3- Excreted in the urine 4-It turns urine brown. 5-Must be given with food or milk b/c it causes severe gastric ulcer 6-Keep urinary pH below 5.5 (acidic) to enhance drug activity b/c it is an alkaline drug and the urine medium is acidic so, the drug will excrete in urine.	1-Given orally 2-Absorption is 90-100% 3- di & tri-valent cations (Ca, Mg, Fe, AL) impair absorption 4- Protein binding 40-80 % 5-Distributed well, including , prostatic tissues 6--Cross placenta and excreted in milk 4-Excreted through non-renal route, SO this drug must be use with patient who have UTI+ renal impairment
Clinical uses	<ul style="list-style-type: none"> 1-Acute urinary tract infections 2-Complicated urinary tract infections 3-Recurrent urinary tract infections 4-Upper respiratory tract infections 5-Pneumocystis carinii pneumonia 6-Prostatitis (acute/ chronic) 		1-As urinary antiseptics (little or no systemic antibacterial effect) - Dose: 100 mg (orally four times daily)	1-UTI's due to Mycoplasma & Chlamydia 2- Prostatitis
ADV	<ul style="list-style-type: none"> 1-Gastrointestinal (Nausea, vomiting) Allergy 2- Hematologic <ul style="list-style-type: none"> - Acute hemolytic anemia <ul style="list-style-type: none"> a) hypersensitivity b) G6PD deficiency - Megaloblastic anemia due to TMP 3- Kernicterus (jaundice) 		<ul style="list-style-type: none"> 1-GIT disturbances: (Nausea,vomiting and diarrhea) 2-Headache and nystagmus. 3-Hemolytic anemia 4- Pulmonary toxicity on chronic use (pulmonary fibrosis) 	<ul style="list-style-type: none"> 1-Nausea, vomiting and diarrhea 2- Thrombophlebitis: inflammation of veins 3- Hepatic toxicity 4 Brown discoloration & deformity of teeth (children) 5- Deformity of bones (children) 6-Vertigo 7-Superinfections
CONTRAINDICATIONS V-IMP- INFO	<ul style="list-style-type: none"> 1-Pregnancy:b/c it crosses the placenta Nursing mother 2- Infants under 6 weeks 3- Renal or hepatic failure: b/c motibilized in liver and eliminated in urine 4- Blood disorders 		<ul style="list-style-type: none"> 1-Patients with G 6P deficiency 2-Neonates 3-Pregnant women 	<ul style="list-style-type: none"> 1-Pregnancy 2-Breast feeding 3-Children

DRUGS	Aminoglycosides Don't given for a long time except of T.B		β-Lactam antibiotics		Fluroquinolones
E.G		Gentamicin	1-Extended- spectrum penicillins (piperacillin)	2- 3 rd generation Cephalosporin Ceftriaxone Ceftazidime	Levofloxacin & Ciprofloxacin
MOA	Bactericidal Inhibits protein synthesis by binding to 30 S ribosomal subunits			Bactericidal Inhibit bacterial cell wall synthesis	Inhibits DNA gyrase enzyme
PHARMACOKINETICS	1-Active against gram negative aerobic organism 2-Poorly absorbed 3- orally Given I.M, I.V. 4-cross placenta 5-Excreted unchanged in urine 6-More active in alkaline medium	Sever infection caused by : 1-gram -ve 2-pseudomonas entrobacter	1-Effective against pseudomoas aeruginosa 2-Penicillinase sensitive 3-Given in combination with β-lactamase inhibitors as tazobactam.	1-Effective against gm-bacteria 2-Given parenterally	
CLINICAL USES				1-severe / complicated UTIs 2-acute prostatitis	1-UTI ^s caused by multidrug resistance organisms as pseudomonas. 2-Prostatitis (acute,chronic)
ADV	1-Ototoxicity 2-Nephrotoxicity 3-Neuromuscular blocking effect				
CONTRAINDICATIONS		1-Renal dysfunction 2-Pregnancy 3-Diminished hearing 4-Myasthenia gravis			

Due to gram -ve organisms
as (E.coli, Klebsiella)



انتهى بفضل الله

كل ما نتمناه.... هي تلك الدعوة الصادقة