



Extended spectrum penicillin prevent **H** influenzae, **H** pylori, **E** coli, **L**isteria monocytogenes, **P**roteus mirabilis, **S**almonella, **S**higella, enterococci.

Mn. **HHELPSS**

Aqueous **penicillin G** is **DOC** for **neurosyphilis**

Methicillin resistance is developed due to the formation of alternative penicillin binding proteins that have less affinity for the drugs

Ampicillin is **DOC** for **Listeria meningitis**

Side effects:

Methicillin – interstitial nephritis

Oxacillin – hepatitis

Nafcillin – neutropenia

Carbenicillin high dose – bleeding

Nafcillin = Neutropenia

β -lactamase inhibitors - Include **C**lavulanic acid, **A**vibactam, **S**ulbactam, **T**azobactam.

Mn. **CAST**

Anti-pseudomonal penicillin

Anti-Pseudomonal Penicillin

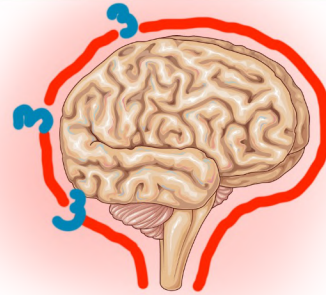
Piperacillin
Ticarcillin
Carbenicillin





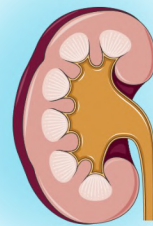
- 3rd generation cephalosporin can cross blood-brain barrier (BBB)

BBB = 3 letters
3rd generation



- 5th generation cephalosporins are useful against MRSA
- Most nephrotoxic – Cephalexin

Cephalexin = Renal Impairment

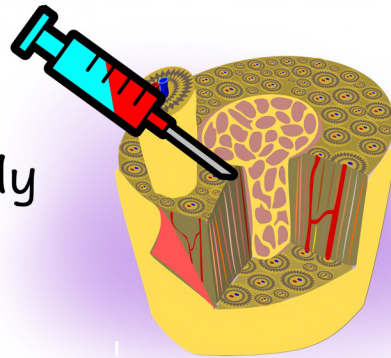


- Cefazolin is DOC for surgical prophylaxis
- Ceftazidime is DOC for melioidosis
- Ceftazidime has maximum antipseudomonal activity
- Cefoperazone is active against pseudomonas, secreted in bile, doesn't cross BBB
- Important side effects - disulfiram-like reaction, vitamin K deficiency, increase nephrotoxicity of aminoglycosides.



- Dapsone cause Hemolysis in G6PD deficient patients, methemoglobinemia
- Trimethoprim can cause Megaloblastic anemia, leukopenia, granulocytopenia, which may be avoided with coadministration of folic acid.

TMP Treats Marrow Poorly



- Antitubercular drugs - Rifampin, Isoniazid, Pyrazinamide, Ethambutol

Rifampin

Isoniazid

Pyrazinamide

Ethambutol

“RIPE”

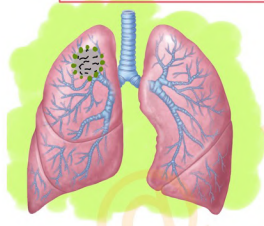




Isoniazid

- Isoniazid is a **prodrug** activated by **catalase-peroxidase**
- **Bacteriostatic** against **resting** and **bactericidal** against **rapidly dividing organisms**
- Metabolized by **Acetylation** which is **genetically controlled**
- **Kat G** gene mutation is the most common mechanism of **resistance**
- **DOC** for **prophylaxis of TB**
- Isoniazid causes **B 6 deficiency** (**peripheral neuropathy, sideroblastic anemia**) (Mn. **INH** Injures **N**eurons and **H**epatocytes)

INH Side effects



- I**nducer of **L**upus
inhibitor of **c**ytochrome **P**450
- N**europathy (**p**eripheral)
- H**epatotoxicity
hemolysis in **G6PD** deficiency

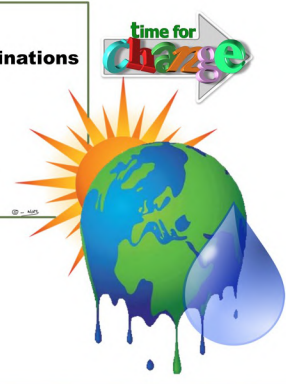
- **Peripheral neuritis** can be prevented and treated by **pyridoxine**
- Can cause **hemolysis** in **G6PD deficient** patients
- **Side effects of INH**

INH Side-effects

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“CHANGE”

- C**hange in **m**emory
- H**epatotoxic, **H**allucinations
- A**nemia, **A**rthritis
- N**europathy
- G**ynecomastia
- E**uphoria, **E**pilepsy



Time for **change**