

PHARMA- RS

Lec 1

▼ Sinusitis

- Acute sinusitis
 - Nasal decongestants: Ephedrine, Xylometazoline
 - Amoxicillin, Co-amoxiclav, Doxycycline
- Chronic sinusitis
 - Correct anatomical abnormalities
 - Antibiotics according to culture and sensitivity

▼ Otitis media

- Mild viral cases
 - Analgesia
- Bacterial cases
 - Amoxicillin or Co-amoxiclav

▼ Pharyngitis and tonsillitis

- Serious cases due to *S. pyogenes*
 - Benzylpenicillin
- Bacterial (with fever, sore throat, difficulty swallowing)
 - Benzylpenicillin, Phenoxymethylpenicillin, erythromycin, clarithromycin, cephalexin
- Continue for 10 days (to prevent rheumatic fever)

▼ Bronchitis

- Acute bacterial cases (*S. pneumoniae*, *H. influenzae*)
 - Amoxicillin, tetracycline, co-trimoxazole
- Chronic cases: same as acute + suppressive chemotherapy (colder months)

▼ Community acquired pneumonia

- Usually *S. pneumoniae* (high fever, pleuritic chest pain, cough)
 - **Drugs of choice:** Benzylpenicillin IV or amoxicillin oral
 - **Penicillin allergy:** Erythromycin, clarithromycin, or azithromycin
 - **Seriously ill (*H. influenzae* & atypical):** Benzylpenicillin and ciprofloxacin
 - **Penicillin-resistant:** Cefotaxime (claforan) IV

▼ Atypical pneumonia

- By **atypical pathogens**, in young adults, fever and respiratory manifestations
 - Tetracycline, Erythromycin or clarithromycin (3 weeks)

Lec 1

▼ Hospital-acquired (nosocomial)

- Usually Staph. aureus, pseudomonas and H. influenzae
 - 3rd gen cephalosporin + aminoglycoside (cefotaxime + gentamicin)
 - Methicillin resistant MRSA: Ciprofloxacin or vancomycin

▼ Pneumonia following influenza

- Usually by Staph. aureus
 - Best guess therapy: Flucloxacillin

▼ Patients with chronic lung disease

- Mixed infection by H. influenzae and S. pneumoniae
 - Amoxicillin, trimethoprim, ciprofloxacin

▼ Immunocompromised patients (AIDS or after immunosuppressive therapy)

- By S. aureus, S. pneumoniae
 - Aminoglycoside with cefotaxime
 - In Pseudomonas: Piperacillin
 - In Pneumocystis carinii (with AIDS): Co-trimoxazole

Lec 2

▼ Anti-TB

▼ Isoniazid (INH)

- Interferes with Mycolic acid synthesis → acts only on mycobacteria
- passes freely, effective intracellularly
- Resting → bacteriostatic, multiplying → bactericidal
- Pharmacokinetics
 - Good GI absorption, but food may reduce its absorption (fatty acids, Al-containing)
 - 20% CSF penetration (non-inflamed meninges)
 - Penetrate to caseous material
 - Renal excretion
- Metabolism
 - Acetylation so Slow acetylators → better response
- Adverse effects
 - Hepatotoxicity (more in elderly and slow acetylators)
 - Polyneuropathy (Prevented by adding pyridoxine)
 - Rashes and acne
 - Hemolytic anemia (G6PD deficit)

Lec 2

▼ Rifampicin

- Inhibits bacterial DNA-dependant RNA polymerase (Bacteria develop resistance when they modify this enzyme)
- Work on gram positive and negative and can kill intracellularly
- Bactericidal
- Pharmacokinetics:
 - Good GI absorption
 - 10-40% CSF penetration (non-inflamed)
 - Hepatic and renal elimination
- Adverse effects
 - Rashes
 - Hepatotoxicity
 - Thrombocytopenia
 - Mild elevation of liver enzymes
 - Orange discoloration of urine, sweat and tears
 - CYP-P450 inducer (reduce serum level of warfarin and estrogen)

Lec 6

▼ First generation anti-histamines

Uses:

- Alone: Antiallergy (for allergic rhinitis, allergic dermatoses, contact dermatoses)
- With H₂ antagonist and epinephrine: Anaphylaxis
- Diphenhydramine: Sedative, Local anesthetic and antitussive
- Meclizine: Prevent motion sickness (+ cyclizine and promethazine) and Antivertigo, *safe in pregnancy*
- Promethazine: Antiemetic

Adverse effects

- Sedation (excitation in children)
- Dizziness
- Fatigue
- Tachyrhythmias
- Allergic reaction in topical zone
- Antimuscarinic effects
 - Dry mouth, blurred vision, constipation, urinary retention

Drug interactions

- Additive: antimuscarinics
- Potentiate: CNS depressants (opioids, sedatives, analgesics, alcohol)

Half-life from 4-12h

Lec 6

▼ Second generation antihistamine

- + ☰ • Less side effects than 1st gen
 - + ☰ ◦ Terfenadine and astemizole removed due to causing fatal arrhythmias
 - Fexofenadine: active ingredient of terfenadine
 - **Cetirizine** is more sedative than Fexofenadine and lorantidine (not used by pilots)
- Pharmacokinetics (Cetirizine, loratadine, fexofenadine)
 - Well absorbed, excreted unmetabolized
 - less lipid soluble than 1st gen
 - half-life 12-24
 - Induce Cyt-P450

▼ H2 Antihistamines

Prototype: Cimetidine (Ranitidine, famotidine, nizatidine have fewer adverse effects)

Orally active, half life 1-3h

Available over the counter

Uses

- Acid peptic disease (duodenal, nocturnal)
- Zollinger ellison: Gastrinoma (acid hypersecretion, peptic ulcer, gi bleeding, diarrhea)
 - PPI better
- GERD
 - PPI better

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