

Bacterial Infections Based on Bugs

Overview of Bacterial Infections

Bacterial meningitis

- Streptococcus pneumoniae
- Neisseria meningitidis
- Haemophilus influenzae
- Streptococcus agalactiae
- Listeria monocytogenes

Otitis media

- Streptococcus pneumoniae

Pneumonia

Community-acquired:

- Streptococcus pneumoniae
- Haemophilus influenzae
- Staphylococcus aureus

Atypical:

- Mycoplasma pneumoniae
- Chlamydia pneumoniae
- Legionella pneumophila

Tuberculosis

- Mycobacterium tuberculosis

Skin infections

- Staphylococcus aureus
- Streptococcus pyogenes
- Pseudomonas aeruginosa

Sexually transmitted diseases

- Chlamydia trachomatis
- Neisseria gonorrhoeae
- Treponema pallidum
- Ureaplasma urealyticum
- Haemophilus ducreyi

Eye infections

- Staphylococcus aureus
- Neisseria gonorrhoeae
- Chlamydia trachomatis

Sinusitis

- Streptococcus pneumoniae
- Haemophilus influenzae

Upper respiratory tract infection

- Streptococcus pyogenes
- Haemophilus influenzae

Gastritis

- Helicobacter pylori

Food poisoning

- Campylobacter jejuni
- Salmonella
- Shigella
- Clostridium
- Staphylococcus aureus
- Escherichia coli

Urinary tract infections

- Escherichia coli
- Other Enterobacteriaceae
- Staphylococcus saprophyticus
- Pseudomonas aeruginosa

When Prophylaxis is Appropriate

Prosthetic heart valve/valvular disease + dental/oral procedures

- infective endocarditis

- GU/GI procedures

Rheumatic fever (recurrence)

People in contact with meningococcal disease

Surgical

People at high risk/in contact with TB

People at high risk/in contact with HIV

Medically Important Microorganisms

G+/G- cocci

G+/G- bacilli

Anaerobes

Spirochetes

Mycoplasma

Chlamydia

General AE of ABX

Vomiting

Severe watery diarrhea

Abdominal cramps

Allergic rxn

Antibiotic Spectra

Narrow Spectrum Active against single or limited group of microorganisms

Extended Spectrum Effective against G+ and some G-

Broad Spectrum Effective against both G+ and G-

Static Vs. Cidal

Bacteriostatics *inhibit* growth without causing death

Bactericidal *Kill* bacteria

Sulfonamides (*DNA synthesis*), Chloramphenicol (*transcription and translation*)

PCN (cell wall inhibitor)

Relies on INTACT immune system to clear nongrowing/viable bacteria

Can be given to patients with COMPRO-MISED immunity

Empiric Treatment - Match the Bug to Location

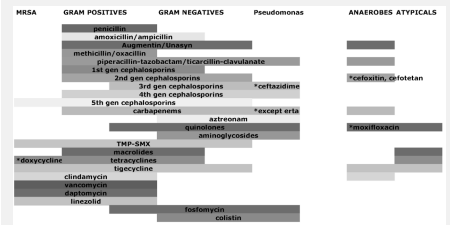
G+ cocci Skin

G- bacilli Urethras

G+, G-, anaerobes Large Intestine

Drug Distribution

Antibiotic Activity



Site of Action of ABX

Cell Wall Inhibitors	Fosfomycin
	Cycloserine
	Vanco
	PCN
	CPN
	Monobactams
	Carbapenems
	Ethambutol
	Pyrazinamide
	Isoniazid

DNA Synthesis & Integrity Inhibitors	Sulfonamides
	Trimethoprim
	Quinolones

Transcription & Translation Inhibitors	Rifampin
	AGs
	Spectinomycin
	Tetracyclines
	Macrolides
	Chloramphenicol
	Streptogramins
	Oxazolidinones