Cheatography

# Principles of AMT Cheat Sheet

by Carm (Carmilaa) via cheatography.com/49544/cs/15400/

## Principles for rational prescribing

1. Is an antibiotic indicated?
2. Cultures before administering AB in hospitalised patients or patients with recurrent infections
3. Choose an appropriate empiric antibiotic
4. Correct dose and route of administration
5. Start AB rapidly in severe infections
6. Practice early and effective source control
7. Evaluate appropriateness everyday

## When is an antibiotic indicated?

Depend on diagnosis?

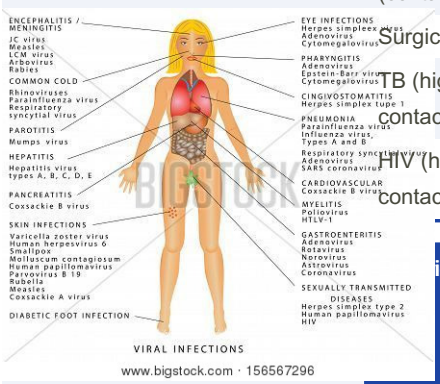
> Fever

> Leukocytosis

> Raised inflammatory markers

> Specific organ dysfunction

## When is an antibiotic indicated?




## Antibiotics Indicated:

P= prophylactic treatment

> Prevention of new/recurrent infections

E= empirical treatment

> treat for most likely infective organism (no culture results yet)

D= Definitive treatment

> treat w/ AB as per results of microbial culture and sensitivity (MCS)

## Leukocytes&Inflammatory Markers:

| Haematology | | |
|---|---|---|
| White Cell count | 4-11/L | + |
| Erythrocyte sedimentation rate | 0-22mm/hr (men) | + |
| | 0-29mm/hr (women) | |
| Platelets | 140-440/L | - |
| C-reactive protein | 0-10 | + |

## Prophylactic treatment:

Infective endocarditis (patients with prosthetic heart valves/valvular disease)

> Dental, oral or URT procedures

> GU surgery / GI procedures

Rheumatic fever (reoccurrence)

Meningococcal disease (contacts)

Surgical

TB (high risk individuals / contacts)

HIV (high risk individuals / contacts)

## ic antibiotic is indicated:

## Empiric antibiotic is indicated: (cont)

2. Site of infection:

> Peripheral line sepsis=sk-in/soft tissue. Likely pathogen. Staph. aureus. Coagulase negative staphylococci, strep. spp.

## Cutaneous Abscess:

**Definition**
Deep inflammatory nodule extending into subcutaneous tissue that preceding folliculitis

**Common aetiologies**
*S. aureus*

**Tests**
None

**Management**
All cases require surgical drainage.

*Uncomplicated cases*
- No antibiotics required

*Complicated cases* (surrounding cellulitis, located on face, systemic sym
- Flucloxacillin 500 mg po 6-hourly for 5 days or co-amoxiclav 1g
- In penicillin allergy use clindamycin 450 mg po 8 hourly

## Osteomyelitis:

Bacterial infection of bone due to contaguous spread from soft tissues, haematogenous seeding or direct inoculation.

Common aetiologies

> – S aureus. – Coagulase----negative staphylococc

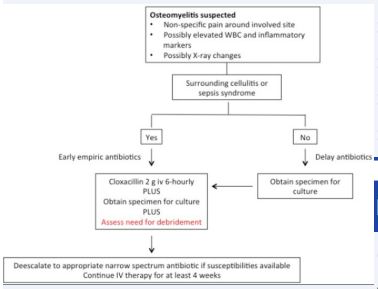
Occasional

> – Streptococci. - Enterococci. - Gram---negative bacilli.

Other

> – M tuberculosis. – Fungal infections.

## Osteomyelitis (cont)




Diagnosis and Treatment

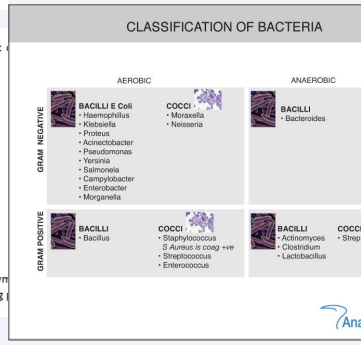
## Osteomyelitis (cont.)

## Empiric Treatments:

Most likely pathogen for site of infection

| | |
|---|---|
| > Gram + cocci: | Skin |
| > Gram - bacilli: | Urethras |
| > Gram + and -, anareobes: | Large intestine |

## Classification of Bacteria:




## Empiric Treatment: drug distribution:

| | CSF | Lung | Soft tissue |
|---|---|---|---|
| Ampicillin | Good (in high doses) | Good | Good |
| Cloxacillin | Inadequate data | Fair | Good |
| Clindamycin | Poor | No data | Good |
| Co-amoxiclav | Poor | Good | Good |
| Ceftriaxone | Good (in high doses) | Good | Good |
| Aminoglycosides | Poor | Poor | Fair |
| Ciprofloxacin | Good (in high doses) | Good | Good |
| Co-trimoxazole | Good | Good | Good |
| Ertapenem | Poor | Good | Good |
| Meropenem | Good (in high doses) | Good | Good |
| Imipenem | Good* | Good | Good |
| Vancomycin | Poor | Fair | Poor |
| Linezolid | Good | Good | Good |
| Daptomycin | Poor | Poor | Good |

*Associated with higher risk of seizures

Will AB reach site of infection?

## Definitive Treatment:

Microbial culture and sensitivity results done.

Culture of:

> Urine

> Sputum

> Cerebrovascular fluid

> Nasal secretions

> Wound / throat swab

> Blood

## Microbial Culture:

Growing microbe to identify the type of bacteria.

**Microbial Sensitivity:**
Identify which antibiotics inhibits the growth of the microorganism

## Microbial Culture (cont.):

Choose by assessing:

1. Source of infection:

> Community acquired Before or less than 48 hours of admission to hospital. Microorganism expected? Wild/non-resistant mo's. 1st line antibiotics. Less side effects.

> Hospital acquired >48 hours after admission or within 30 days of discharge. Microo-rganisms expected? Mutated / resistant microorganisms. Second line antibiotics. More side-effects.

> Recurrent

**Notes:**

- May need to continue IV therapy for 6 weeks or longer
- Do not add rifampicin in cases without foreign material
- Consider tuberculosis if culture-negative or no clinical improvement
- Vancomycin is used for health care-associated osteomyelitis or confir MRSA (loading dose 23 – 30 mg/kg followed by 15 – 20 mg/kg 12-hou maintain trough levels 15 – 20 mg/mL)
- See Chapter 18 for management of open fractures
- Infections associated with prosthetic material should be discussed wi expert

Diagnosis and treatment notes.

| | Oral absorption (%) | Comments |
|---|---|---|
| **Penicillin VK** | Moderate | Take without food |
| **Amoxicillin** | Good | |
| **Flucloxacillin** | Good | Take on empty stomach |
| **Clindamycin** | Good | |
| **Co-amoxiclav** | Good | |
| **Ciprofloxacin** | Good | Do not give via NGT or with antacids |
| **Doxycycline** | Excellent | Take with food, do not co-administer with antacids |
| **Azithromycin** | Poor | Take without food |
| **Metronidazole** | Excellent | |
| **Co-trimoxazole** | Good | |
| **Linezolid** | Excellent | |

routes of administration.

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## Microbial Culture (cont.):

| Duration | Indication |
|---|---|
| 3 days | Uncomplicated UTI (quinolone ONLY), Shigellosis (without bacteraemia, quinolone ONLY) |
| 5 - 7 days (or 3 days after normalization of fever) | Uncomplicated UTI (non-quinolone), Otitis Media, Pneumonia, Meningococcal meningitis, Tick bite Fever (?) |
| 10 (– 14 days) | Sinusitis, Pneumococcal meningitis, Pyelonephritis, pharyngitis (S. pyogenes), Complicated UTI, Prostatitis (acute), Shigellosis (with bacteraemia), Helicobacter eradication (14), Gonococcal arthritis |
| 21 days | Meningitis (Listeria or Gram-negative) |
| 4 weeks | Endocarditis (prosthetic valve 6 weeks), Osteomyelitis, Septic arthritis, Prostatitis (chronic), Brucellosis (6 weeks) |

Recommended duration of definitive treatment.

## Case study questions:

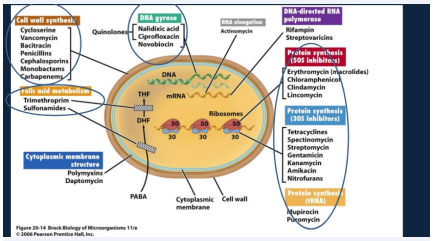
Rationalise if an antibiotic is indicated?

What pharmacological / non-pharmacological treatment would you recommend?

How would you monitor the efficacy and safety of the treatment once initiated?

What is a possible complication of a sore throat? - Otitis media (spread of infection to the middle ear) Meningitis (spread of infection to the lining of brain and spinal canal) Pneumonia (lung infection)

## Road Map:



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