

Bacteria

Structure

Classification

Shape

Stain

Metabolism

Dental Infections

Caries

Periodontal Disease

Dental Infections

Uncomplicated

endo abcess

perio abcess

osteomyelitis

pericoronitis

Complicated

Evolution of Dental Infections

Early

Mixed

Late

Organisms

Symptoms

Treatment of Dental Infections

1. Incision and Drainage

2. Antiinfective therapy?

Indications

Rational Use

Antiinfectives - General Characteristics

Therapeutic effect

Mechanism of Action

ADR's

superinfection

allergy

GI complaints

Drug interaction

oral contraceptives

oral anticoagulants

other Antiinfectives

## **Antiinfectives For Dental Use**

### 1. PENICILLINS cell wall

#### 1. Pen V, Pen G

Use:

Pharmacokinetics

ADR's

toxicity

**allergy**

#### 2. Penicillinase-resistant Penicillins

#### 3. Ampicillins

Ampicillin

Amoxicillin

Amoxicillin + clavulanate (Augmentin)

#### 4. Extended-Spectrum penicillins

## 2. MACROLIDES RNA

### 1. Erythromycin

Use

PK

ADR's

\*G.I.

\*Drug interactions

2. Azithromycin

3. Clarithromycin

3. TETRACYCLINES RNA

Use

PK

ADR's

superinfection

GI

**calcified tissue**

hepatotoxic (with IV)

nephrotoxic (with "old" drug)

drug interactions: chelation

4. CLINDAMYCIN RNA

Use:

PK:

ADR's

GI (pseudomembranous colitis?)

allergy

5. METRONIDAZOLE DNA

Use:

PK:

ADR's

GI

renal toxicity

xerostomia

drug interactions

\* **alcohol**

6. CEPHALOSPORINS cell wall

use:

\*concentrate in bone and synovial fluid

PK:

resistant to penicillinase  
susceptible to cephalosporinase

ADR's:

GI  
superinfection  
allergy

### **Antiinfectives for non-dental use**

1. VANCOMYCIN cell wall

2. AMINOGLYCOSIDES RNA

Neomycin, Streptomycin, Gentimycin

ADR's

\*ototoxicity  
\*nephrotoxicity

3. CHLORAMPHENICOL RNA

ADR's

\*blood dyscrasis

4. SULFONAMIDES DNA

ADR's

\*allergy

5. SULFAMETHOXAZOLE-TRIMETHOPRIM (SMX-TMP) DNA

6. NITROFURANTOIN DNA?

ADR's

GI  
allergy

7. QUINOLINES (FLUROQUINOLINES) DNA\*

Cipro (ciprofloxacin)

Ofloxacin

ADR's

GI  
allergy  
superinfection  
\*Achilles tendon

8. ANTITUBERCULOSIS AGENTS

TB: difficult disease to treat

- 1.
- 2.
- 3.

[	ISONIAZID (INH)	<u>cell wall</u>
	RIFAMPIN	<u>RNA</u>
	PYRAZINAMIDE (PZA)	<u>RNA</u>
	ETHAMBUTOL	<u>cell wall</u>

## 9. TOPICAL ANTIBIOTICS

Neomycin  
Polymyxin  
Bacitracin

Mupiricin

Antibiotic Prophylaxis

## Antifungal and Antiviral Agents Chapter 8

Antifungal agents

*Candida albicans*

Nystatin

Clotrimazole

Ketoconazole

fluconazole

Amphotericin B

Antiviral agents

Herpes simplex  
acyclovir

pencyclovir

## Selected Oral Bacteria

Organism	Shape	Gram Stain	Metabolism
<b>CARIES</b>			
<i>Streptococcus mutans</i>	streptococcus	POS	aerobic / facultative
<b>PERIODONTAL DISEASE</b>			
<i>Actinobacillus actinomycetumcomitans</i> (new name: <i>Aggregatibacter a.</i> )	Rod	NEG	facultative anaerobic
<b>Bacteroides</b>			
<i>Porphyromonas</i>	Rod	NEG	anaerobic
<i>Prevotella</i>	Rod	NEG	anaerobic
<i>Eikenella</i>	Rod	NEG	facultative anaerobic
<i>Fusobacterium</i>	Rod	NEG	anaerobic
<i>Campylobacter</i>	Rod	NEG	anaerobic
<b>DENTAL INFECTIONS</b>			
<i>Strep. viridans</i>	Streptococcus	POS	aerobe / facultative
<i>Staph. aureus</i>	staphlococcus	POS	aerobe / facultative
<i>Strep. β-hemolytic</i>	streptococcus	POS	aerobe / facultative
<i>Porphyromonas</i>	Rod	NEG	anaerobic
<i>Prevotella</i>	Rod	NEG	anaerobic
<i>Fusobacterium</i>	Rod	NEG	anaerobic
<i>Peptostreptococcus</i>	streptococcus	POS	anaerobic
<i>Eubacterium</i>	Rod	POS	anaerobic
<i>Veillonella</i>	cocci	NEG	anaerobic
<i>Actinomyces</i>	rod	POS	facultative anaerobic