**Adjunctive Periodontal Therapy**

Chemotherapeutic Agents Used in Periodontal Therapy

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**Objectives of NSPT:**

- Eliminate or suppress microorganisms
- Promote healing
- Control infection

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**Adjunctive Therapy**

- Select products according to patient needs
- Explain expectations & procedures
- Emphasis on homecare

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**Antimicrobial Treatments:**

- Systemic- administered orally or injection
- Local- delivered at site; irrigation or controlled release

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**Systemic Drugs:**

- Amoxicillin w/ Clavulanate acid (Augmentin)
- Tetracycline
- Minocycline
- Doxycycline
- Metronidazole
- Clindamycin
- Combination of Metronidazole/Penicillin
- Erythromycin

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**Systemic Antibiotics:**

- Conjunction with S/RP
- Beneficial: immunosuppressed, localized or generalized aggressive periodontitis; or unresponsive forms of PD
- Acute infections; periodontal abscesses, pericoronitis, endo lesions
- NUG or NUP
### Disadvantages of Systemic Drugs:
- Drug sensitivities; side effects
- Development of resistant strains
- Local concentration diluted by time it reaches pocket
- Superimposed infections
- Poor compliance
- Overuse
- Gastrointestinal problems
- Nausea
- Diarrhea

• What are some of the advantages?
• Explain to your patients why systemic drugs are not used for treatment of periodontal disease!

### Tetracyclines:
- Concentrated in gingival sulcus & crevicular fluids
- Targets AA
- Aggressive periodontitis
- Controls spread of disease
- Interferes w/birth control pills
- More effective than S/RP alone or systemic alone

### Other Antibiotics:
- Penicillin- less effective
- Metronidazole- kills anaerobic bacteria (Porphyromonas & Prevotella)

### Control Release Delivery:
- Perio-Chip- Chlorhexidine gluconate- (CHX)
- Atridox- (Doxycline hyclate)
- Arestin- (Minocycline HCl)
- Dentocyclin- (Minocycline gel)
- Elyzol- (Metronidazole benzoate gel)

**See study aid on module**

### Uses of Controlled Release/Locally Delivered:
- Initial therapy to enhance instrumentation
- For sites non-responsive to treatment
- Recurrent disease
- Preparation for periodontal surgery
- Peri-Implantitis (failing implants)
- Periodontal abscesses

### Advantages of Controlled Release:
- High concentration at site
- Reaches to depth of pocket
- Enhances effects of debridement
- Beneficial in recurring disease
- Increase in attachment levels
- Provides medication over time
- Remains in pocket & slowly released
- Doesn’t rely on patient compliance
- Side effects reduced because drug is delivered to site
- Patients don’t have to remember to take meds


**Disadvantages:**

- Studies do not conclusively verify benefits
- Failure of instrument to reach deep pockets
- Difficulty to use
- Professional removal required sometimes
- Requires follow-up visits

**DH Follow-up:**

- Reevaluate in 4-6 weeks
- Include: oral hygiene, bleeding, probing, CAL, calculus & plaque, health of tissues
- Evaluate for further treatment/referral

**Subgingival Irrigation:**

- Disruption & dilution of bacteria
- Flushing & lavage of pockets
- Uses: hand held syringe, pulse-jet or ultrasonic tips
  
  See study guide

**Professional Sub-gingival Irrigation:**

- Blunt-tipped cannula attached to a handheld syringe
- Ultrasonic unit equipped w/a fluid reservoir
- Specialized air-driven handpiece connects to dental unit
- Disruption & dilution of biofilm from within pockets

**Irrigation Solutions:**

- Water
- Chlorhexidine gluconate
- Diluted providone-iodine and water
- Diluted stannous fluoride
- Tetracycline
- Listerine
- Saline solution

**Benefits of Irrigation:**

- In-office subgingival irrigation with antimicrobial agent only limited or no beneficial effects over instrumentation alone
- No long-lasting substantivity of antimicrobial agent due to continuous flow of gingival crevicular fluid in pocket
- Antimicrobial agent, (CHX)- must be retained in pocket & slowly released over time for beneficial effect
Topical Antimicrobial Agents:

- Chlorhexidine
- Stannous Fluoride
- Hydrogen Peroxide
- Phenolic Compounds
- Providone Iodine
- Sanguinarine
- Sodium Benzoate
- Quaternary Compounds
- Triclosan

Chlorhexidine Gluconate (CHX):

- 0.12% concentration in US
- High substantivity - 24 hrs
- Ruptures cell membrane
- Kills gram positive & gram negative bacteria
- Bactericidal antiseptic
- ADA approved as an antimicrobial- anti-gingivitis agent
- Disadvantages: staining, altered taste, formation of calculus

What are the patient instructions?

Phenolic Compounds

Essential Oils (EO):

- Alcohol content 26%; Ph 5
- Bacteriostatic
- Up to 12 hours of substantivity
- Disrupts bacterial cell wall
- Reduces plaque endotoxin levels
- ADA/FDA approved as anti-gingivitis & antimicrobial
- Combination of: Eucalyptol, Menthol, Methyl salicylate, Thymol

What type of bacterial is it most effective on?
What are the patient instructions?

Quaternary Ammonium Compounds:

- Low substantivity
- Side effects: staining, calculus formation, & burning sensation
- Some reduction in plaque & gingivitis; not conclusive
- Scope, Cepacol, Crest Pro-Health Rinse, Viadent (currently used)

What are the patient instructions?

Stannous Fluoride:

- .063- rinses; 0.4% - gels; 0.45% toothpastes
- Antimicrobial
- Bactericidal
- Low-moderate substantivity
- ADA approved: reduction in plaque, gingivitis, caries, calculus, & sensitivity

Examples: Gel-Kam, Perio-Med, Gindi-Med, Crest Pro-Health

What are some disadvantages?

Other Products

Hydrogen Peroxide:

- Decreases inflammation not pathogens
- Bacteriostatic- inhibits anaerobic bacteria
- Adverse effects - chemical burns of oral mucosa, decalcification of teeth, black hairy tongue
- Not retained sufficiently long enough in the pocket

Keyes' Technique?

Providone Iodine:

- Bactericidal
- Bad taste, staining, caustic effect on tissue
- Effective for: mouthrinse, subgingival irrigant, & pre-procedural rinse
- Betadine
## Other Products

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<thead>
<tr>
<th>Sodium Benzoate</th>
<th>Triclosan</th>
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<tbody>
<tr>
<td>• Detergent; not an anti-plaque or</td>
<td>• Broad spectrum antiseptic</td>
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<tr>
<td>anti-gingivitis agent</td>
<td>• ADA approved for reduction in</td>
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