“Pearls” of Oral Medicine

The Practice of Dentistry and Patient Expectations!

• **Lunesta and Taste Dysfunction**
  Eszopiclone, marketed by Sepracor under the brand-name **Lunesta**, is a nonbenzodiazepine hypnotic agent (viz., a sedative used as a treatment for insomnia).
  One of the side effects of Lunesta is an **unpleasant taste in the mouth, most commonly metallic or bitter**
  Smell can also be altered

• **Chlorhexidine Inactivation**
  Morning home care affected most: Therefore, better to have patients rinse with chlorhexidine **after** breakfast.

• **Herpes Infectivity and Immunity**
  How is herpes simplex “spread”?
  Why should you wear gloves when performing dentistry on a patient with herpetic lesions if you are already infected with the herpes simplex virus?
  Should you and can you do dentistry on a patient with active herpetic lesions of the lips?

• **Lichen Planus and Candidiasis**
  Treat recalcitrant lichen planus with antifungal as well as with a topical steroid

• **Tongue Brushing and Halitosis**
  Most of the bacteria causing malodor reside on the dorsum of the tongue
  Patients can use toothbrushes, “tongue” scrapers and products that mechanically remove debris such as chewing gum, etc.
  **Tongue brushing is reviewed with all of my malodor patients**

• **Prostaglandin Inhibitors and Herpes**
  OTC prostaglandin inhibitors may help prevent episodes of herpes labialis
  Therefore, can recommend inhibitors such as the ibuprofen products, **to start at first symptoms of prodrome** or when entering “high risk” times
  Suggest: 1200 to 1800mgs a day
• **Lack of Pain and Oral Cancer**
  Oral lesion which “should be” painful and is not may be cancerous ulcer

• **Sun-damage and Lip Cancer**
  Patients with sun-damaged face need thorough examination of lips (and face!)

• **Signs and Symptoms of Actinic Cheilitis and Lip Cancer**
  ◦ Erythema
  ◦ Loss of color
  ◦ Roughness
  ◦ Hyperkeratosis (Scale)
  ◦ Erosion
  ◦ Ulceration
  ◦ Induration
  ◦ “Sore” that does not fully heal

• **“Sore” Gums and Dental Products**
  Erythematous, sore and sloughing tissue and ulcerations may be due to “irritants” in toothpastes and mouthwashes, such as ….

• **“Irritants” Causing Oral Pathology**
  ◦ Detergents: **sodium lauryl sulfate**, cocamidopropyl betaine
  ◦ Tartar control agents: pyrophosphate
  ◦ Bleaches: carbamide peroxide, hydrogen peroxide
  ◦ Flavorings: cinnamon; spearmint

• **Prosthetic Joints and Antibiotics**
  Most prosthetic joints and other artificial devices do **not** need antibiotic coverage before dental procedures
  The 2003 advisory statement of the American Dental Association & American Academy of Orthopedic Surgeons

• **Prosthetic Joints and Antibiotic Regimens 2003 guidelines**
  ◦ **Which joints**: total hips, others ?
  ◦ **High Risk Patients**: Immunocompromised/ immunosuppressed: diabetics; on steroids; HIV+; first 2 years following joint replacement; previous prosthetic joint infections; inflammatory arthropathies; malnourishment; malignancy; hemophilia
**Higher Risk Dental Procedures:** Where bleeding is expected - just about every procedure we do in the mouth!!

**Antibiotic Regimens:** 2 grams amoxicillin 1 hour before tx; If allergic, then 600mgs of clindamycin 1 hour before tx

- AAOS 2009 Information Statement stated:
  “Given the potential adverse outcomes and cost of treating an infected joint replacement, the AAOS recommends that clinicians consider antibiotic prophylaxis for all total joint replacement patients prior to any invasive procedure that may cause bacteremia”

- Specific dental procedures that may potentially cause a bacteremia are not identified in the new statement

- **Prosthetic Joints: Dental Management**
  *(June 2010 American Academy of Oral Medicine Position Statement)*

  With all options: dentists should note in dental record the content of discussions with patients and other clinicians.

  - Option 1: Dentist informs joint patient of lack of scientific evidence to support AP (antibiotic prophylaxis) and adverse potential drug reaction so patient can make informed decision.
    Problem- patient confusion

  - Option 2: Dentist bases clinical decision on 2003 ADA/AAOS consensus statement and literature since then.
    Problem- potential medicolegal jeopardy if no contact with orthopedist for recommendations and then follow them.

  - Option 3 (preferred): Dentist contacts orthopedic surgeon, briefly discusses or outlines in a letter current dilemma and suggests they both follow the 2003 guidelines until a new joint consensus statement is approved.
    - If orthopedist wants to follow 2009 AAOS statement for patients not covered by 2003 ADA/AAOS guidelines, he/she writes Rx
    - If dentist follows 2003 ADA/AAOS guidelines, he/she writes Rx.

  - **RATIONALE:** Contrast between lack of evidence for practice of administering AP and real concerns about drug reactions, resistant bacterial strains, and costs to health care system.

  - **Problem-** inevitable increase in phone calls or communication with orthopedists and possible conflict if orthopedist is asked to write Rx.
    Telephone conversations are considered a “gray” area should litigation arise.
PREVENTION OF ORTHOPAEDIC IMPLANT INFECTION IN PATIENTS UNDERGOING DENTAL PROCEDURES
CLINICAL PRACTICE GUIDELINE
THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS (AAOS) AND THE AMERICAN DENTAL ASSOCIATION (ADA), ET AL 2012

- Evidence-based guideline with three recommendations replaces the previous AAOS information Statement
- Each recommendation is accompanied by rationales, with each being graded strong, moderate, limited, inconclusive or consensus

**Recommendation 1**
- Supported by the highest grade of evidence
- Proposes that the practitioner consider changing the longstanding practice of prescribing prophylactic antibiotics for patients who undergo dental procedures
- The recommendation is founded in evidence that dental procedures are unrelated to Prosthetic Joint Infection (PJI) and that subsequent antibiotic prophylaxis does not reduce the risk of PJI
- High strength evidence suggests that antibiotic prophylaxis reduces the incidence of post-dental procedure related bacteremia, but there is no evidence that bacteremia increases the risk for PJI

**Recommendation 2**
- Addresses the use of oral topical antimicrobials in the prevention of PJI in patients undergoing dental procedures
- There is no direct evidence that oral topical antimicrobials prevent PJI following dental procedures
- There is conflicting evidence that these agents may decrease the incidence of post-procedure bacteremia

**Recommendation 3**
- Only consensus recommendation
- Addresses the maintenance of good oral hygiene

- Oral hygiene measures are low cost, provide potential benefit, are consistent with current practice, and are in accordance with good oral health

**Statement of guideline group**

Evidence-based practice incorporates three components: scientific evidence, clinician’s experience, and the patient’s values. Therefore, this clinical practice guide is not meant as a stand-alone document; rather, all three of
these elements should be incorporated into the decision-making process in an effort to improve patient care. **Physicians, dentists and patients should work collaboratively to customize a treatment plan that is based on the evidence, clinical judgment and patient preferences.**

**The use of prophylactic antibiotics prior to dental procedures in patients with prosthetic joints**

- Evidence-based clinical practice guideline for dental practitioners—a report of the American Dental Association Council on Scientific Affairs

In general, for patients with prosthetic joint implants, prophylactic antibiotics are **not** recommended prior to dental procedures to prevent prosthetic joint infection. For patients with a history of complications associated with their joint replacement surgery who are undergoing dental procedures that include gingival manipulation or mucosal incision, prophylactic antibiotics should only be considered after consultation with the patient and orthopedic surgeon. To assess a patient’s medical status, a complete health history is always recommended when making final decisions regarding the need for antibiotic prophylaxis.

- **Clinical Reasoning for the Recommendation:**
  - There is evidence that dental procedures are not associated with prosthetic joint implant infections.
  - There is evidence that antibiotics provided before oral care do not prevent prosthetic joint implant infections.
  - There are potential harms of antibiotics including risk for anaphylaxis, antibiotic resistance and opportunistic infections.
  - The benefits of antibiotic prophylaxis may not exceed the harms for most patients.
  - The individual patient’s circumstances and preferences should be considered when deciding whether to prescribe prophylactic antibiotics prior to dental procedures.

- **Dental Patients and Anticoagulants**
  - **Can perform most dental procedures with patient on anticoagulants**
    - If PT ratio is 2.5 or less or if INR is 3.5 or less, most dentistry can be performed
    - If greater, then consult with MD, but it usually is better for patient not to alter anticoagulant but to deal with any bleeding after dental procedures by local measures to control bleeding.
    - **What if INR is sub-therapeutic?** Need to discuss with MD since this situation may precipitate a cardiovascular accident.
• **Topical Anesthetic and “Sucrets”**
  
  Sucrets throat lozenges contain the drug **dyctlonene** (2-3mgs per lozenge) which is a potent topical anesthetic
  
  – Not the Sucrets containing hexylresorcinol

• **Palatal Petechiae and Mononucleosis**
  
  Palatal petechiae are an early sign of the disease, **Infectious mononucleosis**

• **Erythroplasia and Oral Cancer**
  
  Red lesions (erythroplakic) are **more** worrisome than white (leukoplakic) ones

• **ACE Inhibitors ....**
  
  Patients taking ACE inhibitors such as benazepril, captopril, enalapril, lisinopril, ramipril, etc. to lower their blood pressure may manifest:
  
  – A persistent **cough** that doesn’t respond to cough medicines (5-10% of patients)
  
  – Angioedema as manifested by **tongue swelling**
  
  Daily iron supplement, ferrous sulfate, may ease this symptom

• **Cinnamon and Oral Irritation**
  
  Cinnamon and other spices and flavoring “oils” are common causes of mucosal irritation and gingival sloughing

• **Antivirals and Prodrome**
  
  The prescription antivirals for herpes labialis are **only effective if taken early during the episode** (best during the prodrome)
  
  The earliest stage of herpes labialis is called the prodrome (have symptoms but no signs) and is characterized by: burning, tingling, itching, feeling of fullness etc. Then first sign of erythema appears.

• **Chlorhexidine as an Antifungal**
  
  For diabetics, especially if blood glucose is not under control
  
  For patients with xerostomia
  
  For patients with high caries index
  
  I use in the above cases for mild to moderately severe cases of candida albicans
  
  I routinely Rx for **chlorhexidine without alcohol**
• **Ultra-potent Steroids and Ulcers**
  When treating very painful, large or recalcitrant oral ulcers, may want to use one of the ultra- potent topical steroids
  Examples: **Temovate; Ultravate** (ointments)
  Suggest using for maximum of two weeks

• **“Warm up” Oral Ointments**
  Many ointments used in the mouth are thick and will not apply easily until warmed

• **HPVs and Oral Cancer**
  Human papillomaviruses (HPVs) are associated with certain cancers in humans, especially cervical dysplasia and cancer in the female genital tract. Specific HPV genotypes are now recognized as being associated with oral cancers. Especially cancers of the **tonsillar, base of tongue and pharyngeal** areas. HPV cancers have better prognosis.
  Oral HPV lesions do not necessarily look like **warts**
  The above has significance in regards to your performing oral cancer screening examinations & recommendations.

• **Chemical “Curettage” and Oral Ulcerations**
  Chemical “curettage” of oral ulcerations is a valid method of treating some oral ulcerations
  Examples of cauterants used for oral lesions: Silver nitrate sticks
  **Debacterol: Epien Medical** (1-888-884-4675)
  Main Procedural Steps
  – Isolate
  – Apply
  – Inactivate
  Remember!
  – **In-office procedure only**
  – Intraoral use only

• **Anti-anxiety Meds & Lichen Planus**
  Medications like valium are sometimes meaningful to prescribe in cases of recalcitrant lichen planus
  Suggest: 5mgs of Valium
  or its equivalent (Librium)
• Smell Dysfunction and…
  Diabetes: Diabetics often lose their ability to identify odors specifically and correctly

  Multiple Sclerosis; Alzheimer’s; Parkinson’s Disease:
  Loss of smell can be an early presenting symptom of the above diseases

• Differential: Herpes and Aphthous
  Aphthous ulcers and recurrent intraoral herpes can be differentiated by
  the characteristics of: location, and size and number of lesions

• Differentiating Aphthous Ulcers from Recurrent Intraoral Herpetic Ulcers
  Aphthous ulcers                          Intraoral herpes
  Size
     – 3mm or larger                  1-2mm
  Location
     – Tissues not bound to bone      tissues bound to bone
  Number
     – Singular to several           multiple/clustered

• Chlorine Dioxide and Halitosis
  The chlorine dioxide products are beneficial in the treatment of halitosis, but
  should not be considered the main focus of malodor therapy!

• Diabetes: Oral Signs and Symptoms
  There are several oral features of undiagnosed as well as known diabetes
  which should be kept in mind: dry mouth and burning tongue

• Topical Anesthetic
  Topically applied benadryl (antihistamine) acts as a mild anesthetic
  Can Rx for: Benadryl elixir mixed 1:1 with Maalox; Kaopectate or Sucralfate
  I use the above for managing painful ulcers,etc. especially in children and
  infants*
  In children, Rx for benadryl that does not contain alcohol

• Red Fungal Infections
  Most fungal infections of the palate, especially under dentures, are not white
  but are red
• **Transplants and Dentistry**
  Tacrolimus (Prograf): used in combination with other drugs to prevent transplant rejection
  – Do **not give erythromycin** to patients on this drug
  Patients with liver transplant:
  – **Avoid clindamycin** with these patients

• **Locations of Oral Cancer**
  Over 80% of oral cancers occur in only three sites: **floor of the mouth**; **lateral border of tongue**; and **retromolar-lateral pharyngeal areas**

• **Twelve “Risk Factors” for Oral Cancer**
  1. Smoking and/or drinking history
  2. Age
  3. Red or white lesion
  4. Location of lesion
  5. Personal or family Hx of CA
  6. No etiology for lesion
  7. Duration
  8. No regression of lesion
  9. “Funny-looking” ulcer
  10. Induration and/or fixation
  11. Lymphadenopathy
  12. Less pain than expected

• **Toothbrushing Psychology**
  Most “important” time to encourage brushing is **after lunch**!

• **Antivirals (Herpes Labialis)**
  **Abreva®** is a non-prescription drug and FDA approved for shortening healing time and lowering the viral titer
  ◊ **Valtrex** has been approved by the FDA for herpes labialis, and I think is most effective!
  
  - **Rx:** Valtrex, one gram caplets
  - **Disp:** 4 caplets
  - **Label:** Take 2 caplets in morning and 2 caplets in evening at prodrome

• **Prophylactic Use of Antivirals**
  For use in patients with **great** likelihood of getting recurrence after specific, known “triggers”
  – Exs.: Stress and trauma of **dental appointment**; wedding; court appearance; social or psychological upheaval etc.
  Dosing: 1 gram Valtrex one hour before dental procedure (or before the triggering event), then 1 gram 12 hours later. (can use 2 grms)
• **Systemic Causes of Burning Mouth**
  ◊ Vitamin deficiencies
  ◊ Xerostomia
  ◊ Menopause
  ◊ Diabetes
  ◊ Medications

• **Asthma & Aspirin**
  Administration of aspirin or NSAIDs may precipitate an asthmatic attack
  – Aspirin causes bronchoconstriction in 10% of patients with asthma
  – Sensitivity to aspirin occurs in 30%-40% of people with asthma who have pansinusitis and nasal polyps (triad asthmaticus)

• **GI Diseases and Oral Manifestations**
  Ulcerative colitis: 20% of patients develop aphthous ulcer-like lesions
  Crohn’s disease: 20% of patients develop atypical mucosal ulcerations and diffuse swelling of lips and cheeks. These may precede diagnosis by several years.

• **Diabetes & Acute Oral Infections**
  Non-insulin controlled patients may need insulin
  Insulin-controlled patients will require increase in dosage of insulin
  Aggressive treatment of infection is called for: I & D, extractions
  antibiotics - culture brittle diabetics

• **Non Steroidal Anti Inflammatory Drug Interactions of Interest to the Dentist**
  NSAIDs & Antihypertensives: antagonistic action of NSAIDs to antihypertensives- so blood pressure will go up
  NSAIDs & Anticoagulants (warfarin): may cause bleeding
  NSAIDs & Salicylates (ibuprofen/aspirin): decreased action of salicylates, so wait 2 hours after taking aspirin to then take NSAIDs
  NSAIDs & Herbal medications for pain (feverfew,etc.): when combined decrease platelet activity = bleeding

• **Facial Cancers**
  Much more common than intraoral cancers
  Etiology is actinic damage (sun), therefore almost all facial cancers will occur on sun damaged skin
• **Vitamin Deficiencies**
  Vitamin deficiencies and insufficiencies are not uncommon causes of oral findings.
  Most vitamin deficiencies manifest with *tongue* changes: erythema and baldness, with soreness the most common complaint.
  Can *not* tell the specific vitamin deficiency from the changes seen.

• **Herpetiform Aphthous Ulcers**
  Same etiology, locations and treatments as the classical - aphthous ulcers
  Only differences are: number of lesions and size!

• **Metabolic Syndrome**
  ♦ *Also known as syndrome X; insulin resistance syndrome; Reaven’s syndrome or CHAOS*
  ♦ This is combination of medical disorders that increase one’s risk for *cardiovascular disease and diabetes.*
  ♦ Prevalence in USA is about **25%** of the population
  ♦ **Symptoms and features:**
    - obesity: >120% ideal body weight or body mass index (BMI) over 27 kg/m²
    - high blood pressure: greater than or equal to 130/85
    - high cholesterol- HDL < 40 mg/dl and LDL >130 mg/dl
      - triglycerides >150 mg/dl

• **Halitosis and Antacids**
  May want to question the patient with bad breath and no obvious etiology about their use of *antacids* (ie. Tums) for indigestion or “upset” stomach.
  Reason: bacteria causing malodor thrive in a basic pH setting which the antacids produce.

• **Halitosis: Doctor Does Not “Smell” Anything!**
  If clinician does *not smell anything* foul
  – Patient could be “tasting” an unpleasant matter:
    • Causes of bad taste
    • How to evaluate: “Palatal tongue rub”
  – Patient could have large psychological component to their complaint:
    • Questions to ask
    • Management of “psychological” halitosis
• **Painful/Burning Mouth Syndrome**
  Differences between a “burning” mouth of known etiology and with clinical signs and the *Syndrome*.
  Management concepts:
  – Reassure patient that no evidence of “bad” disease
  – Discuss relationship between pain and the “mind”
  – Treat any related problems: ex. Xerostomia, bruxing, etc.
  – Remove any source of irritation: do a “cleaning”
  – Treat pain and psychological component: Valium then Tricyclic antidepressants: Elavil, nortriptyline

• **Xylitol Products and Oral Health**
  ◊ Xylitol - is a natural product found in fruits, etc.
  ◊ Used as a sweetener, but not cariogenic (not a *sugar* compound)
  ◊ Is anticariogenic due to its surfactant properties
  ◊ Can be used to manage malodor; dry mouth; decay etc.
  ◊ Products with xylitol: gums; mints; sprays; toothpastes; etc.

• **HBP and CHF Medications Cause Oral Lesions**

• **Foods Cross-Reacting with Latex**

  Apricot  Melon
  Avocados  Nectarine
  Bananas  Papaya
  Celery  Passion fruit
  Cherry  Peach
  Chestnuts  Pineapple
  Fig  Plum
  Grape  Potato
  Kiwi fruit  Tomato

• **Drug-Related Disturbed Taste**
  • Antibiotics
  • Cardiovascular agents
  • CNS stimulants
  • NSAIDs
  • Respiratory inhalants
  • CPC (cetylpyridium chloride)
• Cytotoxic drugs
• Gold suspensions
• Anti-thyroids
• Lithium
• Chlorhexidine
• Smoking cessation

• Sinusitis and Decongestants
  When treating a maxillary sinusitis, besides using an antibiotic, write for a decongestant.
  Antibiotics: 10-14 days of amoxicillin or if allergic-a cephalosporin;
  clarithromycin; azithromycin; Bactrim, Septra; no improvement-Augmentin
  Decongestants: Nasal sprays with ephedrine and/or systemic ones, ie. Sudafed-
  also, want to give mucolytic such as guaifenesin

• For your consideration
  Hesitate and consider the use of nitrous oxide sedation in someone who has a recent history of:
  ▪ Tension pneumothorax
  ▪ Retinal detachment
  ▪ Bowel surgery

• Plavix Resistance
  Up to 5-10% of patients on clopidogrel (plavix) may be resistant to its antiplatelet action and thus not be therapeutically anticoagulated.
  Platelet function and genetic testing can be done
  Switching to prasugrel (Effient) or ticagrelor (Brilinta)
  Clinically, do you or do you not see evidence of platelet action and if not, should you suggest patient seeing physician!?

• Heart Attack Signs in Women
  Uncomfortable pressure, squeezing, fullness or pain in the center of your chest. It lasts more than a few minutes, or goes away and comes back.
  Pain or discomfort in one or both arms, the back, neck, jaw or stomach.
  Shortness of breath with or without chest discomfort.
  Other signs such as breaking out in a cold sweat, nausea or lightheadedness.
  As with men, women’s most common heart attack symptom is chest pain or discomfort. But women are somewhat more likely than men to experience
some of the other common symptoms, particularly shortness of breath, nausea/vomiting and back or jaw pain. If you have any of these signs, don’t wait more than five minutes before calling for help. Call 9-1-1 and get to a hospital right away.

- **Halitosis**
  Bacterial sinusitis which “drains” into nose and then down throat (2nd most common cause of oral malodor)

  **Signs & Symptoms:**
  - Patients aware they have it; or have had it before
  - See post-nasal drip
  - Sinuses tender or painful to palpation
  - Patients taking or “do better” with antibiotics and/or decongestants
XEROSTOMIA

Definitions & Problems
Clinical Definition: **Subjective** complaint of oral dryness
Problems:
  - Functional
  - Dental
  - Psychological

Prevalence of Xerostomia
- Estimated dry mouth prevalence about: 21% of men and 27% for women
- Approximately 1 out of every 4 adult patients complain of dry mouth
- Dry mouth impacts about 30% of the elderly
- Over 60% of xerostomic symptoms can be attributed to use of medications

Composition & Functions of Saliva
- Digestive: Digestive enzymes start the breakdown of food
- Taste: 99% water which is needed to identify food and for pH buffering (saliva at pH of 6.7-7.4)
- Antimicrobial: Contains several immunoglobulins (antibodies) used to identify and neutralize bacteria and viruses
- Secretory glycoproteins: Act as lubricants in the process of breakdown of foods
- Integrity of hard and soft tissues: Contains inorganic ions necessary for cellular activity (Ca, Na, K, Cl, Mg)

Etiology of Xerostomia
- Local Conditions
- Diseases of Salivary Glands and Ducts
- Systemic Conditions

Local Conditions
- Mouth breathing: nasal obstruction; large tongue
- **Smoking/Drinking**: both dry-out mucosa
- Environmental conditions: ultra-cold; low humidity

Diseases of Glands and Ducts
- Obstruction of salivary flow: **stones**; trauma; infection
- Tumors of glands or surgery
- Medical therapies: chemo or radiation
Systemic Conditions

Medications
- Great number and diversity of medications which can cause dry mouth:
  - Especially the:
    - Antidepressants
    - Antipsychotics
    - Beta-blockers
    - Benzodiazepines
    - Antihistamines, including OTC

Medications Causing Dry Mouth
- Antihistamines
- Antiparkinsonians
- Anticholinergics
- Antipsychotics
- Antidepressants
- Decongestants
- Antihistamines
- Bronchodilators
- Antihypertensives
- Diuretics
- Anti-inflammatory
- Sedatives
- Anxiolytics
- Muscle relaxants

Drug History

Systemic Conditions

Other conditions
- Diabetes
- CNS disorders
- Anxiety states
- Vitamin deficiencies, esp. B vitamins
- Rare: heavy metals; prostheses

Systemic Conditions

Autoimmune Disorders
- Autoimmune and connective tissue diseases: xerostomia associated with rheumatoid arthritis; lupus; scleroderma, sarcoidosis
  - Sjogren’s syndrome:
    - Primary Sjogren’s Syndrome: dry eyes and mouth but NO CT disease
    - Secondary Sjogren’s Syndrome: dry eyes, mouth with CT disease (i.e. RA)

Effects of Xerostomia
- Fragile mucosa: ulcerations and infections
- Discomfort
- Taste loss
- Difficulty eating and talking
- Caries, especially rapid cervical decay
Gingivitis/periodontitis

Inability to wear prostheses

**Xerostomia and Prostheses**

- Reduced denture retention and generalized denture intolerance
- Increased degree of oral sensitivity, burning mouth pain and intolerance to certain foods
- Increased risk for infections, eg. candidiasis
- Increased susceptibility to mechanical, chemical, and allergic injury
- Delayed healing of traumatized oral mucosa
- Difficulty in mastication and swallowing

**Xerostomia and Prostheses** (continued)

- Compromised oral hygiene, accumulation of food debris and presence of malodor
- Altered taste
- Limitation of tongue motion and impaired phonetic ability
- Compromised emotional well-being and reduced quality of life

**Oral Signs of Xerostomia**

- Dryness
- Paleness and/or inflammation/erythema
- Erosions/ulcerations
- Tongue alterations: baldness and erythema
- Caries
- *Tissue adherence* to itself and dental instruments (dental mirror that sticks to oral mucosa during routine examination)

**Diagnosis of Xerostomia**

- History:
  - Concerning the xerostomia
  - Patient’s medical history including any medications
  - Tobacco and alcohol use; caffeine intake

- Examination:
  - General: evaluate skin, eyes, hands
  - Oral: look for pathology (soft and hard tissue)

**Clinical Predictors of Salivary Gland Hypofunction**

- Dryness of the lips
- Dryness of the buccal mucosa
- Absence of saliva production during gland palpation
- Decayed/missing/filled teeth
Questions to ask patients:
1. Does your mouth feel dry at night or on awakening?
2. Does your mouth feel dry at other times of the day?
3. Do you keep a glass of water by your bed?
4. Do you sip liquids to aid in swallowing dry foods? *
5. Does your mouth feel dry when eating a meal? *
6. Do you have difficulties swallowing any foods? *
7. Do you chew gum daily to relieve oral dryness?
8. Do you use hard candies etc. to relieve oral dryness?
9. Does the amount of saliva in your mouth seem to be too little, too much, or you don’t notice it? *
   • These questions were statistically significant for patients with actual dry mouth (hyposalivation)

Diagnostic Tests: Xerostomia
✓ Medical/laboratory/experimental
   ✓ Eye: Shirmer; rose-bengal stain
   ✓ Minor salivary gland (lip) biopsy
   ✓ Saliva stimulation
✓ Dental office
   ✓ Cracker/envelope
   ✓ Determine objective/subjective correlation

Shirmer eye test
The Schirmer’s test is used determine whether tear glands produce enough tears to keep eyes adequately moist. Calibrated strips of a non-toxic filter paper are used. One free end is placed within your lower eyelid. Both eyes are tested at the same time. You will be asked to keep your eyes gently closed for 5 minutes. At the conclusion of the test, the paper strips are removed from each lower eyelid and the amount of wetting of the paper strips is measured. Wetting of less than 5 mm is indicative of deficient tear production, but is not necessarily diagnostic of Sjogren’s syndrome.

Labial Gland (lip) Biopsy
✓ Sjögren’s syndrome is characterized by chronic inflammation of the glands that produce saliva and tears. An important method for establishing the diagnosis is to take a biopsy of these glands in order to determine whether inflammation is present, and if so, its type and severity. Approximately 5-7 glands are plucked from the lower lip.
✓ The lesion in Sjogren’s syndrome is termed “focal lymphocytic sialoadenitis” and is characterized by one or more tightly aggregated lymphocytes (more
than 50) adjacent to normal gland tissue and surrounding a duct in a 4 square mm area of gland tissue. These aggregates of lymphocytes are called foci and their total density is called a “focus score”. The lip biopsy may reveal other types of glandular inflammation and point to alternative diagnoses, such as sarcoidosis or lymphoma.

**Subjective Evaluation**
- Four key validated questions on salivary flow rates:
  - Do you have any difficulty swallowing?
  - Does your mouth feel dry when eating?
  - Do you sip liquids to aid in swallowing?
  - Does the amount of saliva in your mouth seem to be too little, too much, or do you not notice?

**Treatment of Xerostomia**
- Eliminate etiology
- Refer for management of underlying conditions
- Stimulate remaining salivary gland function
- Palliation of oral symptoms and prevention of oral sequelae

**Eliminate Etiology**
- Treat or refer for treatment of any causative disease
  - Diabetes; Sjogren’s; airway; salivary gld. dis.; concomitant candidiasis
- Discuss discontinuation or changing any causative medication
- Decrease smoking and/or drinking; caffeine; spices; environmental conditions
- Treat any secondary oral problems, ie candida

**Stimulate Salivary Flow**
- Chewing gum: *sugarless; use of xylitol*
- Hard candies: *sugarless* and citrus
  - especially for denture wearers
- Sialogogues:
  - Pilocarpine
  - Cevimeline HCl

**Pilocarpine**
*(Salagen)*
- Rx: Salagen tabs 5 mgs
- Disp: 100 tabs
- Label: One tab 3 times a day

Salagen is a pilocarpine hydrochloride which is a cholinergic parasympathomimetic agent with predominant muscarinic action

**Precautions**
- Pilocarpine toxicity with very high dosing
- Patients with known cholelithiasis or biliary tract disease
Patients with underlying cognitive or psychiatric disease

**Contraindications and Drug Interactions**

- Patients with uncontrolled asthma, hypersensitivity to pilocarpine, and when miosis (constriction of pupil of eye) is undesirable
- Patients with cardiovascular disease
- Patients with ocular disease
- Patients with pulmonary disease
- Drug interactions:
  - With beta adrenergic antagonists (ie. propranolol); additive effects if patient taking other parasympatho-mimetic medications

**Adverse Effects**

- Effects are due to pharmacologic actions of pilocarpine
  - sweating
  - nausea
  - rhinitis (“running” nose or stuffiness)
  - flushing; dizziness
  - urinary and GI frequency

**Dosing**

- For initial treatment start with 5 mgs three times a day (t.i.d.)
- Titration up to 10 mgs t.i.d. may be needed
- Adverse events increase with dose
- Use lowest dose with is effective
- **May take up to two months** to show meaningful effectiveness

**Help with Prescribing**

- Suggest consulting with M.D. before starting therapy with pilocarpine

**Cevimeline HCl: (Evoxac)**

- Rx: Evoxac capsules 30mgs.
- Disp: 100 capsules
- Label: One capsule 3 times a day

- Cevimeline is a cholinergic agonist that binds to muscarinic receptors
- Same indications as Salagen as well as same contraindications, warnings, precautions and adverse reactions

**Palliation**

- Things to **avoid**:
  - Sugared or caffeinated drinks
  - Alcohol and tobacco
  - Spicy, salty or acidic foods
Hot foods or beverages (cold foods and drinks!)
Mouthwashes with alcohol
OTC antihistamines

**Palliation**
- If it hurts to eat:
  - Try smooth, soft, creamy foods
  - Drink cold liquids
  - Suck on fruit juice popsicles
  - Avoid hot, crunchy and hard foods
- Help with chewing and swallowing:
  - Moisten foods- with mayonnaise, sauces, gravy yogurts, or salad dressings. Dip dry foods into drinks

**Palliation (continued)**
- Soften or thin foods - with skim milk, broth, water or melted margarine. Use blender to chop or liquidize foods.
- Sip drink frequently while eating
- Use straw if it helps you in swallowing
- Also,
  - Liberalize fluids during the day
  - Increase humidity where possible
  - Further nose breathing

**Palliation (continued)**
- “Prescribe” saliva substitutes and moisturizers
  - Saliva substitutes: Salivart, Oralube, Xerolube, Mouth Kote, etc.
  - Moisturizers; oral lubricants:
    - Biotene products:
    - Oral balance gel or liquid spray: lasts long time, OTC, patients like it
    - Coconut oil:
    - Worth trying- microwave small amount and patient rinses with the liquid oil

**Prevention of Oral Sequellae**
- Frequent recall visits- suggest 3 month recalls
- **Anticaries treatments**
  - Fluoride gels, rinses, varnishes, toothpastes, trays
  - (neutral fluorides{2%} only); Xylitol products
  - Above used daily or multiple times a week
- **Remineralization** products ie.- MI + Paste
Check for prosthesis irritation and other intraoral and paraoral infections (fungal and bacterial)

Sjogren’s foundation for information and patient help: via internet or local chapters
UNTOWARD REACTIONS IN THE ORAL CAVITY

Types of *Allergic Stomatitis*
- Immediate contactant stomatitis
- Systemic anaphylactic stomatitis
- Contact (delayed) hypersensitivity
- Drug related erythema multiforme
- Lichenoid drug eruption
- Angioedema

**Allergic Reactions**
- These are the true antigen-antibody reactions. Various types, all involve the immunologic system
- Basically, two types of interest (from clinical standpoint): *Immediate* and *Delayed*
- Examples are numerous and include immediate drug allergies such as to penicillin and delayed reactions such as erythema multiforme
- Signs are usually ulcers and vascular defects (leading to petechiae, bleeding and tissue edema)

**Immediate Contactant Stomatitis**
- When the allergic substance contacts mucosa (or skin), the immune reaction takes place locally (ex. skin-urticaria; respiratory mucosa-hay fever).
  The allergen diffuses through the mucosal membranes, binds with IgE-mast cell complexes and results in histamine release. Therefore, these *immediate* reactions are treated with antihistamines. Common S & S: erythema, edema, vesicles, ulcers. Examples: to chewing gums, mouthwashes, etc.

**Systemic Anaphylactic Stomatitis**
- Another immediate type of reaction. Here, the allergen gains entry to circulation via the GI tract or parenteral route and circulating allergen localizes in some target tissue where it binds to IgE-mast cell complexes (ex. penicillin rxn.). If allergen localizes in larynx or bronchi get anaphylactic shock. If localizes in skin tissue get urticaria, if in oral mucosa get various oral lesions (most deal with vascular damage). Since histamines are released, these reactions are treated with antihistamines.
  Common S & S: can be systemic-anaphylactic shock, urticaria; orally-vesicles, ulcers, petechiae etc.
  Examples: to foods like seafoods, etc.

**Delayed or Contact Hypersensitivity**
- This occurs when an allergen contacts skin or mucosa and complexes with host protein- if allergen is a hapten. T-lymphocyte migration is stimulated into
tissues at site of contact (skin- poison ivy). In mouth, can occur from a number of products like drugs, chemicals, foods, etc. The immune lymphocytes release many mediators, some which kill neighboring host (mucosal) cells resulting in ulcerations. With this type of delayed rxn., histamines are not released, injury is mainly cytotoxic, so steroids are used in treatment and not antihistamines. Common S & S: ulcers (esp. on lips) Examples: to dental chemicals, etc.

Angioedema
Two types:
1. Genetic: patient lacks the complement fraction C1 esterase inhibitor. This is rare type.
2. Allergen mediated: reaction to foods etc. Common type. Systemically introduced allergen elicits an IgE-mediated reaction which localizes in the face (typically the lips) in the submucosal region. Histamine release will result in vascular permeability and diffuse edema. Treatment is use of antihistamines. Common S & S: lips and facial swelling, itching etc. Examples: mainly seen in response to food allergies

Drug-related Erythema Multiforme
• About half of patients who get EM have predisposing causes including allergies to medications. Most common allergens are the sulfa antibiotics and penicillins. Mechanism of lesions is not clear- probably both IgE and T-cell mediated. Therefore, both antihistamines and steroids are used in treatment. Common S & S: vesicles and ulcers, esp. on lips and in mouth Examples: allergies to antibiotics, hypersensitivity rxn. To viral infections, etc.

Lichenoid Drug Reaction
• Oral lesions which look like lichen planus can occur as a response to numerous drugs and medications. Mechanism is probably T-cell related. Treatment is mainly steroids and antihistamines. Common S & S: erythema with striae of Wicham; erosions and/or ulcerations Examples: reaction to many drugs, medications

Oral Allergy Syndrome
The Oral Allergy Syndrome is a fascinating disease entity. It has more recently been renamed Pollen-Food allergy syndrome. In this condition, Hayfever patients sensitized to pollen develop oral allergic symptoms to certain fruits and vegetables. This occurs in up to 40% of all Hayfever sufferers who are allergic to birch or grass pollen. Once sensitized to the pollen, they develop allergy to similar allergens found in fresh fruit and vegetables. Symptoms occur within a few minutes of contact and are almost always localized to the mouth and oro-pharynx with lip and oral itching. Oral swelling with
occasional glottic edema may ensue. Patients do not react to cooked fruit or vegetables.

**ClinicalAppearances of Oral Reactions**
- **Erythematous (Red)**
  - Smooth or patchy-red (lupus-like)
  - Lichenoid
- **Ulcerated or vesicular**
  - Erythema multiforme-like
  - Vesicular, blistering
- **Vascular**
  - Petechiae or ecchymosis
  - “frank” bleeding from the gingival sulci
- **Desquamative**
  - Sloughing

**Reactions From Systemic Ingestion**
- **Foods Likely to Contain Seafood**
  - (Fish or Shellfish)
  - antipasto
  - caponata (salad with eggplant and seafoods)
  - fish food gelatin
  - marshmallows
  - lip balm/lip gloss
  - Marinara sauce
  - pizza toppings
  - Puttanesca Sauce (tangy pasta sauce)
  - salad dressings
  - sauces
  - multi-vitamins

**ACE Inhibitors ....**
- Patients taking ACE inhibitors such as benazepril, captopril, enalapril, lisinopril, ramipril, etc. to lower their blood pressure may manifest:
  - A persistent cough that doesn’t respond to cough medicines (5-10% of patients)
  - Angioedema as manifested by tongue swelling
Daily iron supplement, ferrous sulfate, may ease this symptom
Drug-Related Disturbed Taste
Drugs commonly implicated
- Antibiotics
- Cardiovascular agents
- CNS stimulants
- NSAIDs
- Respiratory inhalants
- CPC (cetylpyridium chloride)-(antiseptic)
- Cytotoxic drugs
- Gold suspensions
- Anti-thyroids
- Lithium
- Chlorhexidine
- Smoking cessation

Reactions From Direct Contact
- Foods Cross-Reacting with Latex
  - Apricot
  - Avocados
  - Bananas
  - Celery
  - Cherry
  - Chestnuts
  - Fig
  - Grape
  - Kiwi fruit
  - Melon
  - Nectarine
  - Papaya
  - Passion fruit
  - Peach
  - Pineapple
  - Plum
  - Potato
  - Tomato

Hypersensitivity to Toothpastes
- Ingredient:
  - Sodium lauryl sulfate
- Signs and Symptoms
  - Burning pain
  - Erythema
  - Sloughing
  - Ulcerations

Signs and Symptoms of Hypersensitivity to a Dental Prosthesis (Material)
- Burning and/or soreness of involved area
- Erythema, localized
- Edema, localized
- Sulcular Weeping
Allergens Commonly Associated With Prosthesis Hypersensitivity
- Cements
- Polishing agents
- Metals: plastics-very rare; nickel-rare
- Ceramics

Patient Evaluation and Diagnosis of an Oral Reaction
- Patient’s history and history of present complaint
  - Allergic profile
  - History of the current problem
  - Similar past experiences
  - Current medications
- Oral and extra oral examination
  - Signs of the current problem
- Establish temporal or dosing eligibility of agent
- Consider other possibilities
  - Drugs not previously considered
  - Interaction of several drugs
- Removal of likely agent
- Challenge with likely agent

Treatment Concepts for Oral Reactions
- Oral reactions usually self-limiting and not progressive
- Healing in 7 to 10 days after elimination of causative agent
- Pain usually not too severe
- Office treatment does not depend on knowing the physiologic mechanism

Treatment of Immediate Reactions
- **Antihistamines**: only for IgE-histamine mediated rxns. within hours of exposure
- Analgesics
- ? Steroids

Treatment of Delayed Reactions
- **Steroids**: delayed reactions will not respond to antihistamines, but will resolve with steroid tx.
- Analgesics
- ? Antihistamines
Analgesics

- **Topical**
  - Dental anesthetics
  - Xylocaine viscous
  - Dyclonine (maximum strength Sucrets)
  - Mixtures
    - antihistamines and “basic” coating

Analgesics (continued)

- **Systemic**
  - Ibuprofen products
  - Other non-narcotic analgesics

- **Antihistamines**

  - **Topical**
    - Liquid benadryl
    - Mixtures

  - **Systemic**
    - Therapeutic dosing of benadryl

- **Steroids**

  - **Topical**
    - Kenalog in Orabase
    - Valisone ointment
    - Lidex gel
    - Decadron
    - Temovate or Ultravate

  - **Systemic**
    - Not usually needed, if skin lesions-refer to MD
Oral Ulcerations

Aphthous Ulcers
• Also called :
  – Recurrent aphthous ulcers
  – Aphthous stomatitis
  – Canker sores
  – Aphthous ulcers minor
  – Minor aphthous ulcers
  – Aphthae
Can also be spelled – apthous (without 1st ‘h’)

Etiology
• Unknown
  – But not microbial in nature (not viral, not bacterial)
• Suspected Causes
  – Historical: Hypersensitivity reaction to streptococcus
  – Multifactorial disease which is immune based. Oral tissues immunologically react to various stimuli:
    • Trauma
    • Endocrine
    • Psychological, emotionally based physiologic alterations
    • Allergic factors

Symptoms Of Aphthous Ulcers
• Usually no prodrome - 1° ulcer just appears
• Painful – mild to moderately severe
• Few systemic symptoms other than possible lymphadenopathy, low grade fever and malaise
• Signs Of Aphthous Ulcers
• Found on mucosa not bound-down tightly to bone
• Usually over 3mm in diameter to a centimeter
• Most typically have a singular ulcer, but may see two or three
• Ulcers last about one week and heal with NO scarring

Clinical Appearance Of Aphthous Ulcers
• Round, superficial, no bleeding
• Well circumscribed borders
• Erythematous halo
• Grey-white membrane cover to ulcer-necrotic tissue
• No fluid compartment (not a vesicle)
Differential For Aphthous Ulcers

• Intraoral, recurrent herpes simplex ulcers
• Traumatic ulcers
• **Other Forms Of Aphthous Ulcers**
  • Aphthous ulcer major
    – Aka: PMNR
      Sutton’s Disease

Other Forms Of Aphthous Ulcers
• Herpetiform aphthous ulcers

**Treatment Modalities**

• Cautery
• Steroids
• Pain relief
• Miscellaneous

**Chemical Curettage/Cautery**

• Silver Nitrate Applicators
  – Sold by pharmaceutical houses
  – Inactivated by chlorides (common table salt)
• Debacterol
  – Sulfuric acid and phenols
  – Distributed by Epien Medical Inc. can order via dental distributors or internet
  – Inactivated by bicarbonate

**Chemical Curettage/Cautery**

• Main Procedural Steps
  – Isolate area
  – Dry lesional area
  – Apply liquid
  – Inactivate

**Steroids**

**Pain Relief Medications**

• **Traumatic Ulcers**
  • Most common oral mucosal ulcer
• Etiology
  – Mechanical
  – Thermal
  – Chemical
• Trauma may be either:
  – Accidentally self-inflicted
  – Iatrogenic
  – Self-induced (psychological overtones)

**Features Of Traumatic Ulcers**
• Pain or tenderness
• Known etiology
• Last about 7 days
  – Except tongue
• Common locations:
  – Tongue
  – Lips
  – Mucobuccal vestibule
  – Gingiva or palate

**Differential For Traumatic Ulcers**
• Unknown etiology
• Aphthous ulcers
• Herpetic ulcers
• Other singular ulcers
• Long-term singular ulcers are problematic

**Treatment Of Traumatic Ulcers**
• Most will become painless and heal in 5-7 days
• In general, are treated similar to aphthous ulcers
• Chronically irritated ulcers may get secondarily infected

**Viral Diseases**

**Herpes Simplex Infection**
Primary Herpes: Clinical Features
• Few days after symptoms first appear, you get oral signs:
  – Severely inflamed gingivae
  – Primary lesions - vesicles appear panorally
  – Vesicles are numerous, small, yellowish and fluid-filled
  – Vesicles on oral mucosa rupture immediately leaving shallow, painful ulcers
Primary Herpes: Clinical Features
- Ulcers surrounded by red halo
- Small ulcers may coalesce to form large, irregularly shaped ulcers
- Lesions usually are panoral in distribution
- Lesions on lip become crusted

Treatment Of Primary Herpes
- Nutritional maintenance:
  - Bedrest
  - Baby foods
  - Fortified drinks
- Force fluids
  - Water
  - Soft-drinks and juices (non-carbonated and non-acidic)
- Get all foods and liquids as cold as possible
- Drink liquids through a straw
- Analgesics
  - Liquids for pain and
  - Temperature reduction
    * caution using aspirin (Reye’s Syndrome)
- Topicals
  - Mixtures
  - No steroids

Recurrent Intraoral Herpes: Clinical Features
- Vesicles rupture immediately
- Very small, numerous ulcers in clusters
- Ulcers with red halo
- Ulcers may coalesce to form larger, irregular ulcers
- Ulcers found exclusively on tissues bound to bone, i.e.
  - Hard palate
  - Alveolar bone
  - Attached gingivae
- Lesions last about 5-7 days

Treatment Of Herpes Labialis
- Historical
  - Diethyl ether
  - Photoinactivation
- Non-professional
  - Keep clean and dry
  - Lysine
  - Ice
– OTC products
– Ibuprofen for viral symptoms

• Topical Medications
• Over the Counter: Topical
• Abreva
docosanol 10% cream
apply 5 times daily at first symptoms
Mode of action: enters cells and modifies cell
membrane to stop continued cell to cell infection
FDA approved to shorten healing time and
shorten duration of symptoms

**Systemic Medications**
• Prophylactic Use of Antivirals
• For use in patients with great likelyhood of getting recurrence after specific
  “trigger”
  – Ex.: stress and trauma of dental appointment
• Dosing: 2 grams Valtrex one hour before dental procedure, then 2 grams 12
  hours later
• Can be used to prevent episodes of herpes labialis due to other known
  “triggers” in cases with great chance for recurrence and significant reasons to
  use this systemic medication. Ex.: Stress of a wedding; court appearance, etc

**Treatment Of Herpes Labialis: Prophylactic Care**
• Prostaglandin inhibitors
  – Prostaglandin release assoc. with reactivation of HSV
  – Patients who know reactivation stimuli will benefit
  – Start prostaglandin inhibitors 1 day before risk period and continue thru
    risk
  – Ibuprofen is good prostaglandin inhibitor
  – Dose: 1200mg to 1800mg/day
• Lip protection
  – Prostaglandins released with trauma to lips:
    • Sunlight (actinic radiation damage)
    • Wind and/or sand
    • Physical irritation
  – Therefore, use of a lip protectant with a sun blocking agent can be
    meaningful

**Lichen Planus**
Background
• Not too rare
• One of most common dermatologic conditions to manifest in the mouth
• Oral involvement often precedes skin lesions
• There are several different oral presentations

**Lichen Planus Etiology and Demographics**
• Unknown etiology, however autoimmune disorder with a genetic predisposition is postulated
• Activating events associated with recurrences:
  – Stress, anxiety
  – Debilitation, malnutrition, injury
  – Hypersensitivity to drugs, allergies
• Seldom seen in “carefree” persons, usually Type A
• Trauma is one of associated activating factors
  – L.P. along scratch lines (Hebner’s phenomena)
• Is chronic disease with periods of remission and exacerbation - which correspond to periods of stress, injury, etc.
• Disease of adulthood; females much more
• Up to 50% of oral lichen planus associated with candidal infection

**Diagnosis of Oral Lesions**
• Tentative diagnosis can usually be made from clinical signs and symptoms and history of lesions
• Can treat to this tentative clinical diagnosis
• If uncertain about diagnosis or worrisome features, do biopsy - histology is pathognomic
• Squamous cell carcinoma can develop in area of previous LP (less than 1%), but unknown whether it is due to malignant transformation of the LP or de novo SCC

**Clinical Forms and Features**
• Two major clinical forms:
  * **Reticular** - most common
  * **Erosive** - symptomatic form
• Several other forms recognized, mainly,
  * **Plaque-like** - less common
• Frequency of distribution for all forms is:
  buccal mucosa 80%; tongue 65%
  lips 20%; other areas, less than 10%

**Reticular Form**
• Most common form
• Asymptomatic
• Lesions consist of radiating white or grey, velvety threadlike papules in a linear or retiform pattern- forming lacy, reticular patches and streaks on the mucosa
• The white, keratotic linear papules are known as:
  • Striae of Wicham (will not rub off!)

**Erosive Form**
• Less common
• Usually symptomatic - mild to severe pain
• Same locations as the Reticular form
• Tend to involve multiple or large areas of mouth
• Lesions begin and progress as: eroded and ulcerated areas of mucosa, irregular in shape. Classically can see striae of Wicham at the periphery of the lesions

Erosive Form (continued)
• If striae are not visualized and history of lesions is not classic, erythroplakia and a biopsy must be considered

**Treatment of Lichen Planus**
• Mainly treating the symptomatic, erosive form
• Rule out cancer and reassure the patient
• Remember, there is a psychological component to many cases
• Steroids are the medication of choice
• If patient has been treated with steroids with little or no success before, go to more potent steroids immediately

**Mild Cases**
• Less potent topical steroid
  – kenalog in orabase
  – valisone ointment
  – Lidex gel
• Topical anesthetic
  – xylacaine viscous
  – OTC’s: i.e. orabase with benzocaine
  – Sucrets with dyclonine

**Moderately Severe Cases**
• More potent topical steroid
  – Decadron
  – Decadron with antacid
• Topical anesthetics
  – Dyclonine: Sucrets
  – Hurricane
  – Benadryl mixed with antacid or Sucralfate
    can add-
• Multivitamin therapy

**Severe Cases**
• High potency steroids
  – Temovate; Ultravate
• Topical anesthetics and systemic pain medications
  – Dyclonine, hurricane
  – Benadryl mixed with antiacid or Sucralfate
  – Ibuprofen or similar products
• Multivitamin therapy
  can add -
• Anti-anxiety therapy
  – Valium; Librium
  – Recalcitrant cases
• *Add antifungal, since many cases of Lichen Planus have a fungal component
• When appropriate, biopsy to rule out cancer
• Possibly refer to Oral Medicine specialist for “off-label” therapy
  * I consider adding antifungal if lesions are not meaningfully regressed after about one week. Many colleagues prescribe an antifungal from the beginning if the LP is fairly extensive
Useful Prescriptions

“Pearls” of Oral Medicine

Antifungals
1. Nystatin (Mycostatin, Nilstat) oral suspension 100,000 u/ml
   60 ml bottle
   Rinse with 2 ml for 2 minutes qid and swallow or spit out

2. Nystatin (miconazole; clotrimazole) ointment
   15 gm tube
   Apply thin coat to denture and to affected areas after each meal

3. Clotrimazole (Mycelex) troches 10 mg
   70 troches
   Let 1 troche melt in the mouth five times a day

4. Fluconazole (Diflucan) 100 mg
   8 tabs
   Take 2 tablets stat then 1 per day with breakfast

5. Pain Relief
   Diphenhydramine elixir (Benadryl) 12.5 mg/5mL mixed 1:1 with aluminum
   and magnesium hydroxide based antacid (ie Maalox)
   200 mL
   Rinse with 1 tsp q2h for 2 minutes then expectorate

6. Antivirals (Herpes Labialis)
   Rx: Valtrex, one gram caplets
   Disp: 4 caplets
   Label: Take 2 caplets in morning and 2 caplets in evening
   at prodrome

Oral Ulcerations
1. Triamcinolone acetonide ointment (0.1% Kenalog in Orabase)
   5 gm tube
   Apply to ulcerated area after meals and at bedtime

2. Betamethasone valerate ointment (0.1% Valisone)
   15 gm (45 gm) tube
   Apply to mouth sores after meals and at bedtime

3. Fluocinonide gel (0.05% Lidex)
   15 gm (30 gm) tube
   Apply to mouth sores after meals and at bedtime

4. Dexamethasone (Decadron) elixir 0.5 mg/mL
   100 mL bottle
   Rinse with 1 teaspoonful for 2 minutes qid and spit out
5. Dexamethasone elixir mixed 1:1 with antacid (i.e. Maalox, Kaopectate)  
   200 mL  
   Swish, gargle for 2 minutes and expectorate, tid

6. Temovate (clobetasol) ointment 0.05%  
   Ultravate (halobetasol) ointment 0.05%  
   One tube  
   Apply to lesions tid. Limit Tx to two consecutive weeks

7. Prednisone (Medrol 4 mg Dosepak 21s)  
   1 dosepak (21 tabs)  
   Take graduated daily doses according to manufacturer’s directions listed on dosepak

8. Ibuprofen 200 mg (Motrin)  
   OTC  
   Take 2-4 tabs q4h, up to 3200 mg/day

9. Lidocaine gel viscous 2%  
   100 mL  
   Hold 1 tbs in contact with the ulcer for 1 minute before meals and expectorate  
   Caution Pt about possible ‘numb’ feeling of throat

10. Dyclone (dyclonine HCl) 0.5% or 1%  
    1 (one) oz. Bottle  
    Apply as needed for pain relief with saturated cotton swab

11. Diphenhydramine elixir (Benadryl) 12.5 mg/5mL mixed 1:1 with aluminum and magnesium hydroxide based antacid (ie Maalox)  
    200 mL  
    Rinse with 1 tsp q2h for 2 minutes then expectorate

12. Sucralfate (i.e. Carafate) suspension mixed 1:1 with diphenhydramine  
    100 ml  
    Rinse with 1 teaspoon q6h for 2 minutes, then expectorate

13. L-Lysine (Enisyl 500 mg)  
    100 (one hundred) tablets  
    Take 2-4 tablets q4h until symptoms subside  
    Note – treatment should begin during the early stage of the recurrence

14. Acyclovir ointment (5% Zovirax)  
    15 gm  
    Apply to oral lesions with a cotton tip applicator 6 times a day  
    Note: treatment should begin during the (prodromal) stage of the recurrence

15. Acyclovir ointment (5% Zovirax)  
    15 gm  
    Apply to oral lesions with a cotton tip applicator 6 times a day  
    Note: treatment should begin during the (prodromal) stage of the recurrence
16. Zovirax Cream (5% acyclovir)
   1 tube (2 grams)
   Apply 5 times daily for 4 days starting as early as possible (prodrome)
   Side effects – slight headache and local irritation

17. Acyclovir (Zovirax) capsules 200 mg
   50 (fifty) capsules
   Take 1 capsule 5 times a day

18. Valtrex 1 gram
   4 caplets
   2 grams, (two 1g caplets) twice daily, for one day (at the start of prodrome)
   Note – not for use in immunocompromised patients

Xerostomia
1. Rx: Salagen tabs 5 mgs
   Disp: 100 tabs
   Label: One tab 3 times a day
2. Rx: Evoxac capsules 30mgs.
   Disp: 100 capsules
   Label: One capsule 3 times a day

Allergic Reactions
1. Dyclonine .5% or 1%
   or Sucrets (maximum strength)
   One oz.
   Apply small amount with Q-tip to affected area
2. Diphenhydramine HCL (Benadryl) elixir 12.5mg/5ml
   4 oz bottle
   Rinse or hold one teaspoon against lesions for two minutes and expectorate
3. Sucralfate (i.e. Carafate) suspension mixed 1:1 with diphenhydramine
   200 ml
   Rinse with one teaspoon for two minutes every several hours then expectorate
4. Diphenhydramine (Benadryl) 25 mg
   (stat loading of 50mgs meaningful)
   12 Tablets
   Take one tablet every 6 hours as needed
5. Certirizine (Zyrtec) 10 mg
   This is now OTC and used primarily for seasonal allergies such as hayfever etc.
   Small container or packet
   Take one tablet daily for several days
   This drug is a selective H1-receptor antagonist (antihistamine)
6. Fluocinonide gel (0.05% Lidex)
   15 gm or 30 gm tube
   Apply to oral sores after meals and at bedtime

7. Dexamethasone (decadron) elixir 0.5mg/ml
   100 ml bottle
   Rinse with one teaspoonful for two minutes q.i.d. and expectorate

8. Temovate or Ultravate ointment 0.05%
   Small tube
   Apply to lesions two or three times a day. Use for maximum of 10 days