Footnote Key:
1. These medications are all contraindicated in microbial diseases. If given to patients with microbial diseases, microbial proliferation is usually enhanced and systemic dissemination is possible. Candidosis is a common side effect.
2. Systemic steroids are contraindicated or must be used with caution in a number of systemic conditions. Consultation with the patient’s physician is recommended before prescribing. Tapering of prednisone is not necessary with 5-7 day burst therapy. Tapering of prednisone is not necessary with alternate day therapy (QOD) if the dosage does not exceed 20 mg QOD.
3. In order to reduce the possibility of adrenocortical suppression, it is important that prednisone be taken in harmony with diurnal adrenocortical steroid levels. In order to accomplish this, prednisone should be taken 1-1/2 hours after normal arising time. Alternate day AM (QOD) dosage also reduces the possibility of adrenocortical suppression.
4. Whenever topical mouth rinses or ointments are prescribed, the manner in which the medication is used is very important. The patient should be advised that the medications are effective on contact and that they should avoid anything by mouth (NPO) for 1/2-1 hour after using them to prolong medication contact time.
5. Hepatotoxicity has been reported.

OPRM Faculty
* Denotes prescription items that must be extemporaneously compounded by a pharmacist. Usually a specialty "compounding pharmacy" is a better choice as they have more experience and knowledge regarding product formulation.

Extemporaneously Compounding Medications for Intraoral Conditions
- Few products available in the U.S. - ?? limited product demand
- Problems:
  - Difficulty with insurance payments, XIX & Medicare will not reimburse for the full cost
  - Expensive – Dental Pharmacy can mail Rxs to patients living in Iowa – at significantly less cost to patient
  - “I can do that” - generalized lack of knowledge – many pharmacies incorrectly compound intraoral products causing mucosal irritation, reduced efficacy
- Make sure products are not flavored or sweetened (especially with sucrose) unless necessary!

I. CHRONIC NON-MICROBIAL MUCOSITIS
  (aphthous stomatitis, erosive lichen planus, mucous membrane pemphigoid, pemphigus, erythema multiforme)

Mouth rinses: Magic mouth rinse, miracle mouth rinse, 1, 2, 3 mouth rinse, special mouth rinse formulas, etc.
DON’T bother!! WHY: Dilution effect from mixing commercial products renders them ineffective
  - **Nystatin 12,500 units/ml**
    - Normal nystatin 100,000/ml
    - 8 fold decrease from our minimum therapeutic agent
  - **Benadryl 1.25 mg/ml**
    - 7.5 mg fairly low dose too
    - 25 mg much more commonly used
    - Does give a topical anesthetic effect at least in the higher concentrations
  - **Hydrocortisone**
    - Hydrocortisone 0.25 mg/ml
    - 10 fold decrease from dexamethasone 0.5mg/5ml
    - 20 fold decrease from 0.1% triamcinolone acetonide suspension
  - **Kaopectate**
    - Older formulation of Kaopectate used an attapulgite clay to coat the mucosa. This product has been reformulated and now contains bismuth subsalicylate, which can cause a grayish-black discoloration of the tongue and is contraindicated in patients with hypersensitivity to salicylates.
Baseline initiatives to allow therapies to work:

- Decrease common possible irritants – Avoid:
  - Pyrophosphates
  - Cinnamon
  - Menthols, phenols, etc.

- Maintain “salivary pellicle”
  - Avoid sodium lauryl sulfate (SLS) in dentifrices
  - Avoid EtOH if possible

- Maintain saliva
  - Xerogenic agents
  - Hydration

- Manage bugs
  - Bacteria
  - Fungi

Mouth rinses

RX: Dexamethasone 0.5 mg/5ml oral solution¹
Disp: 240 ml
Sig: Rinse with 5 ml for 1 min. and expectorate QID, PC (after meals) and HS (before retiring). NPO 1\2 hr

- Commercial product covered by Medicare Part D and HMOs in general
- Use correct strength to avoid toxicity
- Biologic half-life 36-54 hours

RX: Triamcinolone acetonide (micronized) 0.1 OR 0.2% aqueous suspension²
Disp: 240 ml
Sig: Rinse with 5 ml for 1 min. and expectorate QID, PC (after meals) and HS (before retiring). NPO 1\2 hr.

- About 2 x stronger than the commercial dexamethasone
- Use the 0.2% for more severe cases
- Better effect if made with micronized powder at Dental Pharmacy vs. commercial in Kenalog® inj. (also much less expensive $26.96 at DP vs. $250 w/ Kenalog)

RX: Triamcinolone acetonide (micronized) 0.1 OR 0.2% in nystatin 100,000 U/ml suspension
Disp: 240 ml
Sig: Rinse with 5 ml for 1 min. and expectorate QID, PC (after meals) and HS (before retiring). NPO 1\2 hr.

- Use in patients predisposed to candidosis
- Commercial nystatin suspension is 30-50% sucrose
- We make a sugar-free nystatin suspension at the COD ($36.10 at DP)

RX: Triamcinolone acetonide (micronized) 0.1 OR 0.2% in amphotericin-B 15mg/ml suspension
Disp: 240 ml
Sig: Rinse with 5 ml for 1 min. and expectorate QID, PC and HS. NPO 1\2 hr.

- Use in patients predisposed to candidosis
- Our amphotericin-B suspension is sugar-free
- More efficacious than nystatin suspension
- Use amphotericin-B 25 mg/ml if needed
- (69.95 at DP)

Ointment

RX: Triamcinolone acetonide 0.1% OR 0.5% ointment
Disp: 15 gm
Sig: Apply thin film to inner surface of dentures or medication trays up to QID, NPO 1\2 hr.

- Low to medium potency steroid, price $18
- Use 0.1% strength on lips and dermis
- Still fluorinated and can thin lips or dermis long term
- We usually use higher potency steroids in trays
- Choose desonide instead for chronic use
- Seat trays for 30 min., then rinse mouth

RX: Fluocinonide 0.05% OR clobetasol 0.05% ointment
Disp: 15 gm
Sig: Apply thin film to inner surface of dentures or medication trays BID. Seat for 30 minutes

- High potency steroids, commercial products
- Instruct patients to expectorate & rinse mouth thoroughly after use
- Price of commercial products $70-150 for 15 g tube
Occlusive Ointment

Note: Orabase Maximum Pain Reliever Paste® (Colgate) with 20% benzocaine is no longer on the market.
- Similar products such as Oral Pain Reliever 20% Paste® (CVS Health) and RITE AID Toothache Pain Relief 20% Paste® (Rite Aid Corp.) contain 20% benzocaine, but do not have the same ingredients as the original Orabase®.
- These products contain menthol, methyl salicylate and gelatin and may not form a smooth plastic paste when mixed with commercial steroid preparations.
- We recommend using an Ora-hesive® base, available only through compounding pharmacies, when a more “occlusive” ointment is required. Ora-hesive® base does not contain a local anesthetic, but either benzocaine or lidocaine may be added.

RX: Triamcinolone acet. 0.5% ointment 1:1 with Ora-hesive® base
Disp: 20 gm
Sig: Apply thin film to dried mucosa BID-QID, PC & HS. Do not rub in. NPO 1/2 hr.
- Lower potency mixture due to 1:1 dilution
- Prescribe ointments to mix with Ora-hesive®
- Rubbing may cause the product to become grainy & lose elasticity

RX: Clobetasol 0.03%, 0.06% or 0.1% compounded ointment 1:1 with Ora-hesive® base
Disp: 20 gm
Sig: Apply thin film to dried mucosa BID. Do not rub in. NPO 1/2 hr.
- Allows for various concentrations of clobetasol, including higher concentrations than obtained by mixing commercial products 1:1 with Ora-hesive®

RX: Triamcinolone 0.1% Dental Paste®
Disp: 5 gm tube
Sig: Apply thin film to dried mucosa QID. Do not rub in. NPO 1/2 hr.
- Commercially available but cost to patient without insurance is $50-80 per 5 gram tube!
- Low concentration of triamcinolone
- Good “bandage” effect, useful in pediatric patients

Combined Anti-inflammatory & Antimycotic Topical Agents

RX: Clobetasol 0.05%, clotrimazole 2% ointment
Disp: 15 g
Sig: Apply thin film inner surface of dentures or medication trays BID. Seat for 30 minutes. Rinse mouth thoroughly after use
- Compounded from drug powders (not a 1:1 mixture)
- Allows for 2x commercial strength of clotrimazole
- Can customize strengths of both agents
- Ointment formulation is more occlusive than creams
- ($35.95 at DP)

Systemic and Intralesional Steroids

RX: Prednisone 5 mg, 10 mg, 20 mg tabs
Disp: #
Sig: 40mg PO q A.M. (1-1/2 hrs after normal arising time) x 5 days followed by 10 mg QOD. A.M. x 10 days
- Short bursts ≤ 3 weeks don’t require taper
- Best taken with food
- Dose range 40-80 mg per day, depending on professional judgment; generally for severe acute cases such as erythema multiforme or initial therapy for long term unmanaged pemphigus, lichen planus or pemphigoid
- When daily dose is 30 mg or greater patients may experience insomnia, headache or irritability
**RX:** Triamcinolone acetonide injectable 40 mg/ml
(Kenalog®) diluted to 10 mg/ml or use Kenalog 10 mg/ml strength

*Directions:* Inject 10-40 mg (shake syringe immediately before use)

- Of value in management of solitary lesions recalcitrant to topical or systemic steroids
- Best mixed with local anesthetic with epinephrine as the diluent
- Area should be anesthetized before injection of triamcinolone acetonide suspension if local anesthetic is not used.

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### II. BENIGN MUCOUS MEMBRANE PEMPHIGOID

**Anti-collagenase Agents**

**RX:** Doxycycline or minocycline 50-100 mg tabs/caps

*Disp:* #30

*Sig:* Take QD or BID with food and plenty of water.

- Avoid taking HS – esophageal irritant
- Use as an adjunct to steroid therapy
- Avoid taking with antacids, iron, calcium tablets
- Nicotinamide has similar actions but requires close monitoring by a specialist
- FDA pregnancy category: D

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### III. APHTHOUS STOMATITIS

**Pathophysiology:** Immunologic

- **Location:** nonkeratinized, unattached mucosal surfaces
  - Typically buccal vestibule, lateral or ventral tongue, floor of mouth
- **Heals in a predictable manner**
  - Types: minor, major, herpetiform
  - Treatment not usually necessary for the common minor type
- **Precipitating Factors:**
  - Cinnamon Oil
  - Medications
  - Genetics
  - Sodium Lauryl Sulfate (SLS)
  - Stress
  - Minor Oral Trauma
  - Estrogen Shifts
  - Dentifrices
  - Minor Oral Trauma

**Primary Prevention Factors:**

- Relate to maintenance of salivary pellicle or impeding the recognition of antigens to the immune system

**Pharmacotherapeutic Management Choices:**

- **Topical Route**
  - Treatment of choice: triamcinolone acetonide rinse - alters course of disease, increases healing rates
  - Steroid ointments, pastes
- **Systemic Route**
  - Prednisone - for difficult cases, large +/- multiple ulcerations
- **Over-The-Counter Products**
- **Inappropriate Chronic Treatment**
  - Cautery agents - do not affect course of disease (Debacterol®, silver nitrate, Negatan®, laser)
  - Tetracycline rinses, oral antibiotics etc.

- **Sodium Lauryl Sulfate (SLS) Free Dentifrices**
  - Sodium lauryl sulfate (aka: sodium dodecyl sulfate, SDS) is a surfactant (foaming agent) found in most commercially available toothpastes and gels
Causes dose-dependent epithelial desquamation
Note: All SLS free products are not appropriate for some patients due to pyrophosphate content

- Cocamidopropyl betaine (CABP or CPB) - surfactant that is less irritating to tissue than SLS
  - RX: Prevident® 5000+ Dry Mouth, 100 g container (only SLS free Prevident® product)
  - Note: For overdenture abutments use only Prevident gel (56 g tube), not a dentifrice (so no surfactants or abrasives)

- OTC dentifrices with CABP
  - Biotène® (GSK) Fresh Mint Original Gentle Formula
  - Biotène® (GSK) Gentle Mint New Gentle Formula
  - Sensodyne® (GSK) products

- Squigle® Enamel Saver Toothpaste
  - Very mild dentifrice – no tartar control agents or irritating flavors, uses poloxamer as surfactant
  - Can be difficult to find in retail stores, may be obtained online or mailed from D. pharmacy

IV. CANDIDOSIS

Topical Suspensions

RX: Nystatin oral suspension 100,000 U/ml
Disp: 12 day supply (240 ml)
Sig: Rinse with 5 ml for 1 minute and expectorate P.C. (after meals) and HS (before retiring) NPO 1/2 hr.

- Poor antifungal
- Commercial products contain 33-50% sucrose, not recommended for this reason, especially in chronic/recurrent cases like Sjögren’s, medicament xerostomia or post radiation xerostomia, ($80)

RX: Nystatin oral suspension 100,000 U/ml Sugar-Free
Disp: 12 day supply (240 ml)
Sig: Rinse with 5 ml for 1 minute and expectorate P.C. (after meals) and HS (before retiring) NPO 1/2 hr.

- Viscous, will coat tissue
- Compounded at Dental Pharmacy ($35)
- Must be refrigerated, shorter shelf life than commercial, but not cariogenic

RX: Amphotericin-B oral suspension 25mg/ml
Disp: 14 day supply (280 ml)
Sig: Rinse with 5 ml for 1 minute and expectorate P.C. (after meals) and HS. (before retiring) NPO 1/2 hr.

- Much more effective than nystatin suspension
- Of use for fluconazole-refractory infections or when C. krusei or C. glabrata are suspected
- May use 15mg/ml strength when combining with triamcinolone acetonide

Ointment

RX: Nystatin ointment100,000 U/g
Disp: 15 gm
Sig: Apply thin film to inner surfaces of dentures and angles of mouth QID, PC & HS. NPO 1/2 hr.

- Inexpensive, but poor antifungal
- Works OK under dentures, but not first line agent
- Bright yellow color may be objectionable for angular cheilitis, ($18)

RX: Clotrimazole 2% ointment
Disp: 30 g
Sig: Swab or apply thin film onto affected area QID, PC and HS, NPO 1/2 hr.

- Useful for debilitated patients who cannot rinse
- Higher concentration (2%) and more occlusive than commercial creams
- Compounded at Dental Pharmacy
Cream

RX: Clotrimazole 1% cream (Rx, OTC as Lotrimin AF®, g)
Disp: 15 gm Rx or 12 gm OTC
Sig: Apply thin film to inner surface of denture and angles of mouth QID. NPO 1/2 hr. after use.

- Has slight anti-staph activity
- Available OTC ($7) but labeled for athletes foot and jock itch which may cause some patients to hesitate.
- Identical to Rx version ($28)

Troches

RX: Clotrimazole 10 mg oral troches
Disp: 70 troches
Sig: Dissolve 1 troche in mouth every 3 hours while awake (5 tabs per day). NPO 1/2 hr. after use.
- Patients with decreased salivary flow should rinse mouth with water prior to use to enhance dissolution
- Compliance problems with 5X daily therapy
- 1-2 troches QD HS is useful for maintenance or prevention. ($120)
- Can also dissolve 2 troches in am, 1 in afternoon and 2 HS to improve compliance
- Contains sucrose, FDA pregnancy category: C

Buccal Tablet

RX: Miconazole 50mg buccal tablet (Oravig®)
Disp: 14
Sig: Apply tablet to canine fossa once daily for 14 days
- Approved for patients 16 years and older
- Cost $900/14 tablets

Systemic

RX: Fluconazole 100 mg tablets
Disp: #11-15 tabs
Sig: Take 1 tablet BID for first day, then take 1 tablet daily for 10 – 14 days.
- Cost of 15 tablets is approximately $65, cheaper to break 200 mg tablets in half
- Serious interactions with statin drugs, psych drugs, sulfonylureas, warfarin, some antihypertensives and many other drug classes – always check for interactions before prescribing
- FDA pregnancy category: X Even single doses in 1st or 2nd trimester can cause miscarriage

Antibacterial Mouth Rinse

RX: Chlorhexidine 0.12% oral rinse (Peridex®, g)
Disp: 473 ml
Sig: 10 - 15 ml mouth rinse for 30 seconds and expectorate BID (after breakfast and HS), NPO 1/2 hr.

- 11.6% alcohol content will irritate ulcerations and enhance xerostomia, $4-14
- Due to chemical deactivation, separate from toothpaste by 30 min.
- FDA pregnancy category: B

RX: Alcohol-Free Chlorhexidine 0.12% oral rinse (Paroex®)
Disp: 473 ml
Sig: 10-15 ml mouth rinse 60-90 seconds and expectorate BID, PC, AM & HS. NPO 1/2 hr.

- Non-alcohol formulation – useful for alcoholics, patients with mucositis, xerostomia, $16
- Due to chemical deactivation, separate from toothpaste by 30 min.

V. HERPES & HERPES ZOSTER INFECTIONS

Herpes Labialis (Cold Sores, Fever Blisters)

- Virus remains dormant within the dorsal root ganglia until activated
- Asymptomatic viral shedding occurs for several days before the prodromal period & after lesions heal
- Specific triggers:
  - Sunlight (ultraviolet radiation) UVB
  - Tissue injury & inflammation
  - Physical or emotional stress: malnutrition, fever, colds, influenza, menstruation, exposure to extremes in temperature

Systemic Treatment of Herpes Labialis (Immunocompetent Patients)

RX: Valacyclovir 1 g tablets (Valtrex®, g)
Disp: 4 tablets
Sig: 2 tablets at onset of symptoms, then 2 tablets 12 hours after first dose
  - Drug of choice - probably most efficacious therapy to date
  - Price of 4 tablets $20

- A prodrug of acyclovir which is 3 times more bioavailable than acyclovir, may use in patients ≥ 12 years of age
- WARNING: Use with caution in renal disease, has not been studied in pre-pubescent children
- Headache &/or nausea are dose related side effects (15%)

RX: Famciclovir 500 mg tablets
Disp: 3 tablets
Sig: Take 3 tablets (1500 mg) at onset of prodome
  - Symptom duration decreased by 1.7 days when taken within an hour of onset of prodome
  - Price of 3 tablets $30, not available in all pharmacies

- Best taken within 48 hours of symptom onset
- Can cause headaches, dizziness, GI upset
- Efficacy & safety haven’t been established in patients under 18 years of age
- 2nd line therapy after valacyclovir
- FDA pregnancy category: B

Topical Treatment of Herpes Labialis (Immunocompetent patients)

Ointments and Creams

- Topicals are MUCH less efficacious than oral (systemic) therapy, prohibitively expensive and not recommended but included here for completeness.
- Topical creams and ointments are not appropriate for intraoral use

OTC: Docosanol 10% cream (Abreva®)
2 gm tube
Directions: Apply 5 times daily at onset of symptoms until lesions heal
- Recurrent HSV labialis studies (2) demonstrate mean duration of lesions & pain ↓ by ½ to 1 day
- ???? Efficacy compared to other topicals
- $20/2 g tube

RX: Penciclovir 1% cream (Denavir®)
Disp: 5 gm tube
Sig: Apply every 2 hrs (9 times/day) during waking hours for 4 days beginning at the onset of symptoms
- 1997 study demonstrate ↓ mean duration of lesions & pain ↓ by 1 day.
- More efficacious than acyclovir ointment
- Cost: >$895/5 g tube

RX: Acyclovir 5% cream or ointment (Zovirax®, g)
Disp: 5 gram tube cream (Zovirax®) 5 gram tube ointment
Sig: Apply thin film every 3 hrs (six times daily) at the onset of symptoms and continue for 7 days
- Little benefit, duration of Sx. decreased by ½ day
- 5 g tube of Zovirax® cream $805, 5 g tube 5 g tube generic ointment $300
- Recurrent HSV labialis shows no clinical benefit, but some ↓ in viral shedding
- Is NOT effective in prevention of recurrent herpes labialis
Oral buccal tablet

RX: Acyclovir 50 mg buccal tablet (Sitavig®)
Disp: 2
Sig: Apply tablet to the upper gum region (canine fossa) within 1 hr after onset of prodromal symptoms.
  ▪ Single application per episode
  ▪ Study: mean duration of herpes labialis episodes were decreased by ½ day compared to placebo ($315/2 tablets)
  ▪ Patients experienced 35% aborted episodes
  ▪ Place on canine fossa and hold in place with slight pressure on the upper lip for 30 sec. to ensure adhesion.
  ▪ Apply to ipsilateral to symptoms
  ▪ Contraindication: allergy to casein (milk protein)

Systemic Agents for Primary & Recurrent HSV Gingivostomatitis (Immunocompetent Patients)

▪ Acute herpetic gingivostomatitis can occur on both movable and attached oral mucosa. Recurrent infections in healthy patients are usually limited to attached gingival and hard palate
▪ It is important to note that the duration of treatment for a primary case of HSV gingivostomatitis vs a recurrent case is different. Recurrent cases require shorter durations of treatment!!!
▪ Short term therapy is indicated for patients who get recurrent herpetic after prolonged sun exposure, dental treatment, etc. Therapy must be initiated before exposure to any triggers. Start the day before trigger exposure and continue for a full course of treatment as listed below.

RX: Valacyclovir 500 mg or 1 g (Valtrex®, g) caplet
Primary HSV Gingivostomatitis :
  Sig: 1 gram BID x 7-10 days
Recurrent HSV Gingivostomatitis:
  Sig: 500mg BID x 3 days Or 1 g once daily x 5 days
  ▪ WARNING: Use with caution in renal & hepatic disease, has not been studied in pre-pubescent children
  ▪ Headache & nausea are dose related side effects (15%)
  ▪ Can cause headaches, dizziness, GI upset
  ▪ Best taken within 48 hours of symptom onset
  ▪ Efficacy & safety haven’t been established in patients under 18 years of age

RX: Famciclovir 250 mg or 500 mg tablets
Primary Gingivostomatitis HSV:
  Sig: 250 mg TID x 7-10 days
Recurrent Gingivostomatitis HSV:
  Sig: 1000 mg BID x 1 day Or 125 mg BID x 5 days
  ▪ Only effective if initiated very early in recurrence
  ▪ WARNING: Use with caution in renal impairment, dehydration
  ▪ FDA pregnancy category B
  ▪ Primary gingivostomatitis in children: Acyclovir 15 mg/kg PO 5 times daily for seven days (maximum of 1000 mg/day)

RX: Acyclovir 400 mg (Zovirax®, g) tablet
Primary HSV Gingivostomatitis:
  Sig: 400 mg 3 times daily for 7-10 days
Recurrent HSV Gingivostomatitis:
  Sig: 400 mg 3 times daily for 5 days
  Or 800mg 3 times daily for 2 days
  ▪ Long term prophylaxis is indicated if patients have at least six or more herpetic outbreaks per year. Reassess need every 6 – 12 months.

Prophylaxis for Recurrent HSV Infections (Immunocompetent Patients)

Prophylaxis for recurrent herpes labialis (RHL) and gingivostomatitis using oral antivirals:
▪ Long term prophylaxis is indicated if patients have at least six or more herpetic outbreaks per year. Reassess need every 6 – 12 months.

RX: Acyclovir 400 mg (Zovirax®, generic)
Disp: 60 tablets
Sig: Take 400 mg BID
  ▪ Must be given in divided doses
  ▪ Prophylactic doses between 800-1600 mg/day reduces the frequency of herpes labialis by 50 – 78%
RX: Valacyclovir 500 mg (Valtrex®, generic)  
Disp: 30 caplets  
Sig: Take 500 mg daily  
- Doesn’t appear to have large advantage over acyclovir, but regimen is easier  
- Regimen for patients with >9 episodes/year is 1 gram QD

RX: Famciclovir 500 mg (Famvir®, generic)  
Disp: 30 tablets  
Sig: Take 500 mg BID  
- No evidence that Famciclovir prevents RHL

Varicella Zoster Virus (VZV) Infections

- 25-fold decrease in zoster after immunization  
- Patients with prior varicella zoster virus infection have a 10% chance of acquiring shingles  
- Increased risk of stroke within 6 months of episode, antivirals may have protective effect  
- For patients >50 years add prednisone to decrease pain in acute phase of disease  
  - Does not decrease incidence of post-herpetic neuralgia  
- Trials showing benefit of Rx therapy only in patients treated within 3 days of onset of rash:

RX: Valacyclovir 1 gram (Valtrex®, generic) tablets  
Disp: 21 caplets  
Sig: Take 1 caplet TID for 7 days  
  - Drug of choice  
  - Patients should begin treatment within 48 hours of the onset of symptoms.  
  - More effective than acyclovir for acute pain cessation and decreasing the frequency of persistent pain.  
  - WARNING: Use with caution in renal impairment

RX: Famciclovir 500 mg tablets  
Disp: 21 tablets  
Sig: Take 1 tablet every 8 hours for 7 days  
  - Prodrug of penciclovir, approximately same efficacy and safety as acyclovir  
  - Patients should begin treatment within 48 hours of onset of symptoms, efficacy after 72 hours is questionable  
  - WARNING: Use with caution in renal function impairment, has not been approved in children <18 years of age  
  - Equivalent to acyclovir in reduction of acute pain and incidence of PHN

RX: Acyclovir 800 mg (Zovirax®, generic) tablets  
Disp: 35 - 50 tablets  
Sig: Take 1 tablet q 4 hours (5 tablets per day) for 7-10 days  
- Therapy is most effective if started within 48 hrs after the onset of symptoms  
- Meta-analysis: acyclovir accelerated by 2-fold pain resolution and reduced incidence of PHN at 3 & 6 months.
VI. LIP CONDITIONS - SUMMARY AND EXAMPLES

NOTE: EVERY PATIENT IS UNIQUE AND WE INDIVIDUALIZE ALMOST ALL THE EXAMPLES GIVEN IN THIS SECTION.

Chapped lips and baseline therapy for other lip problems

- **Moisturizer: Lanolin**
  - Use 3-4 times a day
  - Brand names Lansinoh® or Purelan100® (venture into the breast feeding aisle)
  - Ultra pure (HPA) brands are less allergenic and more efficacious than generic lanolin products

- **Lip balm:**
  - PROBABLY NOT NECESSARY UNLESS GOING OUT IN THE WIND or SUN
  - Prefer Banana Boat® Aloe with Vitamin E (SPF 45) or Blistex® Complete Moisture® (SPF 15)
    - Use when in sun or wind once or twice if in the sun frequently
    - Put this on immediately after the lanolin

Ulcerative conditions of the lips, including idiopathic, lichen planus, pemphigoid etc.

- **Steroids (ointments on vermilion)**
  - Use only nonfluorinated steroids and limit these steroids ONLY for inflammatory or ulcerative conditions confined to the lipstick portion of the lips
  - Rx: desonide 0.05%. Apply very thin layer to lips twice a day
    - PUT ON AFTER LANOLIN
    - DON'T apply to corners of lips

- **Apply for three weeks or until the ulcer is gone**
  - Do not prescribe these products for use > 3 times per year
    - If ulcer resolves but erythema remains start decreasing the application of the steroid cream, per outline below or until erythema resolves
    - First to once a day x 10-14 days, then every other day x 10-14 days, then every third day x 10-14 days
    - If ulcer resolves without residual erythema steroids may be discontinued completely

- **IF THE ULCER IS STILL THERE IN 3 weeks may consider short term ultrapotent steroid:**
  - 1:1:1 Mixture of clobetasol 0.03% ointment and 2% mupirocin (Bactroban, g) ointment and clotrimazole 2% cream

Conditions of the lips occurring outside the vermilion border

- **NON-STEROIDAL AGENTS IN PERIORAL/CIRCUMORAL REGION**
  - Steroids are NOT indicated for circumoral or perioral dermatitis
  - Likewise angular cheilitis cases (covered below) only rarely requires anti-inflammatory agents

- **Creams are preferred on skin surfaces**
  - In these areas outside the vermilion pimecrolimus or tacrolimus may be used
NOTE: Due to the “black box” warning associated with these medications, this handout summary will not cover these. If clinician is familiar with restrictions and limitations they may be mixed and used with mupirocin and clotrimazole similar to the clobetasol 1:1:1 mixture above.

- **Treatment of angular cheilitis**
  - Use 2% clotrimazole cream and 2% mupirocin cream (mixed in 1:1 ratio)
    - Apply to lip first thing in the morning and last thing at night
    - After the morning application wait about a half hour to apply the lanolin or Blistex Complete Moisture if going outside.
  - Don’t use the desonide while using this mixture unless consultation for complicating factors is performed. There are numerous cofactors including vertical dimension, obsessive compulsive disorders and perioral rhytides.