Therapeutic Agents and Treatment Strategies for the Management of Selected Mucosal Diseases

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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. 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.
3. 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.
4. Baseline hematology laboratory studies to include platelets are necessary to monitor possible bone marrow suppression.
5. Hepatotoxicity has been reported.

* 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 of compounded prescriptions & “I can do that” - generalized lack of knowledge
  - 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 Special mouth rinse formulas, etc.
DON'T bother!! WHY:
- **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”**
  - Many older formulas use the attapulgite clay in Kaopectate® 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)
  - Avoid EtOH if possible
- Maintain saliva
  - Xerogenic agents
  - Hydration
- Manage bugs
  - Bacteria
  - Fungi

Mouth rinses

RX: Dexamethasone 0.5 mg/5 ml oral solution
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 version
- Covered by Medicare Part D and HMOs in general
- Watch ethanol % in various brands (prefer Roxane)
- Use correct strength to avoid toxicity

● RX: Triamcinolone acetonide (µ) 0.1 OR 0.2% aqueous 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.

- About 2 x stronger than the commercial dexamethasone
- Use the 0.2% for more severe cases
- 4 cc 95% EtOH per 240 ml
- Best if made with micronized powder (µ) vs. commercial injectable suspension (also much less expensive)

● RX: Triamcinolone acetonide (µ) 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

● RX: Triamcinolone acetonide (µ) 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

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.
- We usually use higher potency steroids in trays
- Low to medium potency steroid
- Use 0.1% strength on lips and dermis
- Still fluorinated and can thin lips or dermis long term
- 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
- Higher potency steroid
- Instruct patients to expectorate & rinse mouth thoroughly after use
Occlusive Ointment

**RX:** Triamcinolone acet. 0.5% ointment 1:1 with Orabase®
Disp: 30 gm
Sig: Apply thin film to dried mucosa BID-QID, PC & HS. Do not rub in. NPO 1/2 hr.

- **Orabase®** contains benzocaine. Allergenicity?
- Lower potency mixture due to 1:1 dilution
- Prescribe ointments to mix with Orabase® (never creams)

**RX:** Clobetasol 0.05% ointment 1:1 with Orabase®
Disp: 30 gm
Sig: Apply thin film to dried mucosa BID. Do not rub in. NPO 1/2 hr.

- May use fluocinonide 0.05% ointment
- Rubbing causes the Orabase® to become grainy & lose elasticity – RPh must mix ingredients very gently to avoid a grainy/ineffective product

**RX:** Triamcinolone 0.1% in Orabase®
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 approximately $60 per 5 gram tube!
- Low concentration of triamcinolone
- Good “bandage” effect, useful in pediatric patients

Combined Anti-inflammatory & Antimycotic Topical Agents

**RX:** Clotrimazole 1% cream mixed 1:1 with triamcinolone acetonide 0.5% oint. OR clobetasol 0.05% ointment
Disp: 30 gm
Sig: Apply thin film inner surface of dentures or medication trays BID. Seat for 30 minutes.

- For patients prone to candidosis
- Dilution factor is a potential problem
- Most retail pharmacies will compound these “1:1” type of compounds, no clotrimazole oint. on market

**RX:** Clobetasol 0.05%, clotrimazole 2% ointment
Disp: 10, 20 or 40 gm
Sig: Apply thin film inner surface of dentures or medication trays BID. Seat for 30 minutes.

- 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

Systemic and Intrallesional 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.
II. BENIGN MUCOUS MEMBRANE PEMPHIGOID

Anticollagenase 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 H5 – 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

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
  - Genetics
  - Medications
  - Stress
  - Sodium Lauryl Sulfate (SLS)
  - Estrogen Shifts

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
  - Pentoxifylline - has been of limited usefulness
  - Prednisone - for difficult cases, large +/or 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
  - Note: All SLS free products are not appropriate for some patients due to pyrophosphate content
  - Prevident® 5000+ Dry Mouth, 100 g container (only SLS free Prevident® product)
  - Biotène® (GSK) toothpaste and gel
  - Tom’s of Maine Peppermint Clean and Gentle Fluoride Toothpaste
  - Sensodyne®: Original, all Iso-Actives, all Pronamels

IV. CANDIDIASIS

Topical Suspensions

RX: Nystatin oral suspension 100,000 U/ml
Disp: 14 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.

- Commercial products contain 33-50% sucrose, not a first-line choice for this reason, especially in chronic/recurrent cases like Sjögrens, medicament xerostomia or post radiation xerostomia
**RX**: Nystatin oral susp. 100,000 U/ml **Sugar-Free**  
Disp: 14 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  
- 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

**RX**: Clotrimazole 10 mg/ml gel  
Disp: 30 g  
Sig: Swab thin film onto affected area QID, PC and HS, NPO 1/2 hr.  
- Useful for debilitated patients who cannot rinse  
- Compounded with clotrimazole powder and Biotène Oral Balance® Gel (GSK)

**RX**: Nystatin ointment 100,000 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

**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 (best price value) but labeled for athletes foot and jock itch which may cause some patients to hesitate. Identical product as Rx version

**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.  
- Generic price is > $6.5 per troche  
- Compliance problems with 5X daily therapy  
- 1 troche QD HS or BID is useful for maintenance or prevention  
- FDA pregnancy category: C

**RX**: Miconazole 50 mg (Oravig®) buccal tablets  
Disp: 14 tabs  
Sig: Place rounded side of tablet to tissue above incisor once daily. Hold in place with light pressure over the upper lip for 30 seconds to ensure adhesion. Next day: remove remaining tablet & apply to opposite side. May eat/drink normally. Do not chew gum.  
- Avoid in patients with casein (milk protein) allergy  
- If tablet is swallowed <6 hrs. of placement, drink 8 oz H2O and replace with new tablet. If > 6 hrs. wait until next dose  
- Adverse effects: price $ 23/tablet, dysguesia 2.9%, diarrhea 6%, nausea 4.6%, vomiting 2.5%, headache 5%  
- Not approved for children under 16 years of age  
- FDA pregnancy category: C
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 $20.00
  ▪ Dose-related interactions with statin drugs, benzodiazepines, sulfonylureas, warfarin and some antihypertensives and many other drug classes – always check for interactions before prescribing
  ▪ FDA pregnancy category: D

Antibacterial Mouthrinse

RX: Chlorhexidine 0.12% oral rinse (Peridex®, g)
Disp: 473 ml
Sig: 10 - 15 ml mouthrinse for 30 seconds and expectorate BID (after breakfast and HS, NPO 1\2 hr.
  ▪ 11.6% alcohol content will irritate ulcerations and enhance xerostomia
  ▪ 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 mouthrinse 60-90 seconds and expectorate BID, PC, AM & HS. NPO 1/2 hr.
  ▪ Non-alcohol formulation – useful for alcoholics, patients with mucositis, xerostomia
  ▪ 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 & hepatic disease, has not been studied in pre-pubescent children
  ▪ Headache &/or nausea are dose related side effects (15%)
  ▪ FDA pregnancy category: B

RX: Famciclovir 500 mg tablets (Famvir®, g)
Disp: 3 tablets
Sig: Take 3 tablets (1500 mg) at onset of prodrome
  ▪ Symptom duration decreased by 1.7 days when taken within an hour of onset of prodome
  ▪ Price of 3 tablets $18, 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, adjust dosage in renal impairment
  ▪ 2nd line therapy after Valacyclovir
  ▪ FDA pregnancy category: B
RX: Acyclovir 400 mg (Zovirax®, generic)
Disp: 25 tabs
Sig: 400 mg 5 times daily (every 4 hours while awake) for 5 days
- Only effective if initiated very early in recurrence
- Symptom duration decreased by ½ day
- Price of 25 tablets $18
- Duration of pain & time to complete healing is unaffected with doses of 400 mg TID
- Increasing dose to 400 mg 5 times daily ↓ duration of pain by 36% & time to loss of crust by 27%
- WARNING: Use with caution in renal function impairment, dehydration,
- FDA pregnancy category: B

Topical Treatment of Herpes Labialis (Immunocompetent patients)
- Topicals are MUCH less efficacious than oral (systemic) therapy, prohibitively expensive and not recommended but included here for completeness. Note: 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 during waking hours for 4 days beginning at the onset of symptoms
- Recurrent HSV labialis studies (2) demonstrate mean duration of lesions & pain ↓ by 1 day.
- More efficacious than acyclovir ointment
- Cost: >$500/5 g tube

RX: Acyclovir 5% cream (Zovirax®) or ointment (Zovirax®,g)
Disp: 5 gram tube cream (Zovirax®) 5 gram tube ointment
Sig: Apply thin film every 3 hrs (at least six times daily) at the onset of symptoms
- Little benefit, duration of Sx. decreased by ½ day
- 5 g tube of Zovirax cream $700, 5 g tube of generic oint. $250
- Recurrent HSV labialis shows no clinical benefit, but some ↓ in viral shedding
- Is NOT effective in prevention of recurrent herpes labialis

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
**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

- Only effective if initiated very early in recurrence
- **WARNING:** Use with caution in renal function 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)

**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
- 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 20% chance of acquiring shingles

**Trials showing benefit of Rx therapy only in patients treated within 3 days of onset of rash:**

**RX:** Valacyclovir 1 gram (Valtrex®, generic)

- **Disp:** 21 caplets
- **Sig:** Take 1 caplet TID for 7 days
- Drug of choice

- Patients should begin treatment within 72 hours of the onset of symptoms.
- More effective than acyclovir for cessation and duration of post-herpetic neuralgia
- **WARNING:** Use with caution in renal & hepatic disease

**RX:** Famciclovir 500 mg (Famvir®, generic)

- **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 studied in children <18 years of age
- Equivalent to acyclovir in the duration of acute pain

**RX:** Acyclovir 800 mg (Zovirax®, generic)

- **Disp:** 35 - 50 tablets
- **Sig:** Take 1 tablet q 3 hours while awake (5 tablets per day) for 7-10 days

- Therapy is most effective if started within 48 hrs after the onset of symptoms
- In our experience, oral acyclovir has been of value in controlling the epidermal and mucosal lesions due to herpes zoster. It has not had major effect on the pain associated with herpes zoster
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 Purelan* (venture into the breast feeding aisle)
  - Ultra pure 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, 2nd choice is Herbal Answer® by Blistex® (In a green tube)
    - Use when in sun, 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 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
    - 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 0.05% ointment and 2% mupirocin (Bactroban, g) ointment and clotrimazole 1% 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 1% 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 Herbal Answer 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.