What about OTC Products?
• Compliance can be even more challenging! Patients are confused!

When It Just Ain’t Happening
• Traditional Treatment
  = Little or No Improvement

Keep Looking
  Autoimmune
  Nocturnal Lagophthalmos
  Parasites

Autologous Serum
• Contains
  = Epithelial Growth Factor (EGF)
  = Transforming Growth Factor 8 (TGF8)
  = Fibronectin
  = Vitamin A
  = Other Cytokines

Autologous Serum
• Blood Draw at Lab
• Spin down to plasma @4000 rpm for 20 minutes
• Deliver to Compounding Pharmacy
• 2:1 Filtered Compounding with BSS
• 8 Bottles
• Frozen until used

Autologous Serum
• 1 gtt q2h from morning until bedtime
• Keep Vial Refrigerated
• Keep Additional Vials Frozen Until Use
• 8 Straight Weeks
• Evaluate After 6-8 Weeks
• Possible Additional Course
**Autologous Serum Cost**

- Lab Draw $30
- Compounding Pharmacy $120
- $150 for 8 Vials
  - IF Patient delivers Serum to Pharmacy

**Autologous Serum Cost**

- Lab Draw $30
- Compounding Pharmacy $120
- Virology Testing $210
- Freeze and Shipment To/From Compounding Pharmacy
- Approximately $450 to $550 for 8 Vials

**Amniotic Membrane**

[Image of BioOptix Amniotic Membrane]
Sutureless Amniotic Membrane

- ProKera – Amniotic Membrane for wound healing
  - Corneal Ulcer
  - Bullous Keratopathy
  - Folds in Descemet’s
  - Chemical Burns
  - Mechanical Complications 2ary to graft
  - Disruption of surgical wound
  - Non-healing surgical wound
**Biological Scaffolding**

- Helps initiate an active healing process by providing proteoglycans and growth factors
- Collagens, fibronectin, and laminin
- Cryopreserved with heavy-chain hyaluronic acid
- Inhibits proinflammatory cells
- Suppress T Cells

**Insertion of Pro-Kera**

- Remove from inner pouch
- Rinse with saline (prevents stinging from preservation media)
- Apply topical anesthesia
- Hold upper lid and have patient look down
- Insert into superior fornix
- Slide under lower eyelid
- Check for centration

**Possible Tape Tarsorrhaphy**

**Self Retaining Amniotic Membrane**

- Cost of Pro Kera Approximately $900 to $1000
- Cost of Bio Optix Approximately $600
- Medicare Allowable Nevada $8520
• Persistent Corneal Defect
• Recurrent Cornea Erosion
• Corneal Ulcer
• Pterygium Graft
• Bullous Keratopathy
• Band Keratopathy

• Two Procedures:
  = Self Retaining
  = Sutured or Non-Self Retaining

• Anterior
  – Infectious
    • Bacterial
    • Viral
    • Parasitic
  – Posterior
    – Meibomian gland dysfunction

Blepharitis

Demodex Mite
Demodex Mite

Demodex

- Life Cycle 14 1/2 Days
- .1mm to .4mm
- Demodex Brevis Live in Sebaceous Glands Connected to Hair Follicles (Zeis)
- Demodex Folliculorum Live in the Eyelash Follicles and Meibomian Glands
- Move at 1cm Hour
- Avoid Light and Migrate at Night

Demodex

- Linked to Some Forms of Rosacea
- Mating at Night in Hair Follicle
- Eggs are Laid Deep Inside Sebaceous and Meibomian Glands
- Larvae Hatch in Glands 3-4 Days
- Develop Into Adults 7 Days

Demodicosis

Demodicosis

- Vast Majority Go Unobserved without Symptoms
- Suppressed Immune System?
- Population Explodes
- Results in Demodicosis

Demodicosis

- Dry Eyes
- Itching
- Scaling of Lids
- Decreased Vision
- Madarosis
- As a result of blockage of follicles and hyperkeratinization and epithelial hyperplasia

- Stimulation of the host’s responses and cell-mediated reactions under the influence of the mites and their waste products
Increases of Demodex with Age

- Study of 435 People 2 to 96 Years of Age
- Eyelashes Removed and examined under light microscope
- Classified on the basis of mature and larval forms

13% of subjects 3 to 15 years
34% of subjects 19 to 25 years
69% of subjects 31 to 50 years
87% of subjects 51 to 70 years
95% of subjects 71 to 96 years

Demodex Diagnosis

- Observation Under Light Microscope of Lash Follicle
- Small and Translucent
- Often Diagnosis of Exclusion
- Need Reliable Clinical Tests

Tea Tree Oil

- Compounding Pharmacy
- 50% Solution of Tea Tree Oil
- 20% Solution of Tea Tree Ointment
- Tea Tree Shampoo
- Tea Tree Soap
- Cliradex

Tea Tree Oil

- Begin Application of Tea Tree Lotion at Night on Face/Lids/Lashes
- Office Visit
  - 4% Lidocaine Applied to Base of Lashes
  - 50% Tea Tree Oil Applied to Base of Lashes
  - Repeat X 2 in 10 Minute Intervals
  - Lotemax qid

Nocturnal Lagophthalmos

- Ask Every Dry Eye Patient “how do your eyes feel first thing in the morning when you wake up?”
- Look for lid closure
- Children
- Solutions:
  - Ointments, gels, weights, tape
  - Tranquileyes, Lacriserts
Staining

Nocturnal Lagophthalmos

Thank You

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