Advances in OSD: Treating Dry Eye

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DEWS

Dry eye is a multifactorial disease of the tears and ocular surface that results in symptoms of discomfort, visual disturbance, and tear film instability with potential damage to the ocular surface. It is accompanied by increased osmolarity of the tear film and inflammation of the ocular surface. Dry Eye is a multifactorial disease of the ocular surface characterized by a loss of homeostasis of the tear film, and accompanied by ocular symptoms, in which tear film instability and hyperosmolarity, ocular surface inflammation and damage, and neurosensory abmormalities play etiologic roles. —The Definition and Classification of Dry Eye Disease, DEWS 11, TFOS 2017

Dry Eye is a multifactorial disease of the ocular surface characterized by a loss of homeoctasts of the tear film, and accompanied by ocular symptoms, in which tear film instability and hyperosmolarity, ocular surface inflammation and damage, and neurosensory abmormalities play etiologic roles.

Dry eye is not just a <u>disease</u>, it' s a <u>complex, multi-</u> <u>factorial disorder</u>.

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Dry Eye /Ocular Surface Disease

- Medical Ocular condition or disease
- Ocular manifestation of a systemic problem
- Ocular complication from a medical Treatment

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Dry Eye /Ocular Surface Disease

 What Systemic Diseases, Medical and Surgical procedures and Medical Complications effect

Ocular Homeostasis

Dry Eye /Ocular Surface Disease

Diabetes

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- Thyroid Disease
- Autoimmune disease
- Hormonal changes
- Botox and Filler procedures
- Facial plastic procedures
- Graft VS Host disease (cancer Tx complications)

Dry Eye /Ocular Surface Disease

- Endocrinology
- Dermatology
- Facial Plastics
- Rheumatologist

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Dry Eye /Ocular Surface Disease

- I just bought a Lipifow and you need this procedure today
- And here is Rx for restasis
- See you in 6 months and OH my goodness

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Dry Eye /Ocular Surface Disease

- I just read about this new IPL treatment so be sure to stay in touch so as soon as I purchase one it will be marketed as my treatment of choice
- Here is a coupon for your first treatment when I learn how to do it!!!
- Oh there is no monetary amount on the coupon , it is just to let you know that I am a dry eye specialist

Dry Eye /Ocular Surface Disease

- The future of the new dry eye treatment medical model model
 - Typical Third party managed practiceCash only fee for service model
- Cash only OSD practice
- Can you really do this ??

Dry Eye /Ocular Surface Disease

- Are you going to fall into the trap or
- Will you excel and deliver a real solution for the patient
- There are no cookbook treatments for Dry EYE









Point-of-Care Testing

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E



Which dyes do you routinely use when examining a DED patient?

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Matrix-Metalloproteinase-9 (MMP-9)

Tear Volume (Schirmer's Testing or Phenol Red Thread)

Osmolarity

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Meibography

Interferometry Blink rate measurement Lipid layer thickness (LLT) assessment



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If DED is on continuum, do doctors need to differentiate which subset (ADDE or EDE) is present?

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Toxic epitheliopathy

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Who is a good candidate for an punctal plug?



| BRUDER | Surgical Instrument Line | |
|--------|--|---|
| | Item #39650 BRUDER Epilation Forceps These forceps feature non-slip jaws/tips and an easy-grip, no slip handle for precise eyelash removal. German stainless. | 3. |
| | Item #98651 KARPECKI Punctal Plug Forceps This instrument has a groove on the inside tip to hold the plug solidly in place during the procedure. Also if necessary the instrument can be turned 50 degrees to a flat side to push the plug into place. German stainless. | |
| | Item #98652 KARPECKI Bandage Lens Forceps This instrument has a narrow, but rounded tip. The application of a special coating instead of serration assures the bandage will not slip when being removed. Slide the forceps under the edge of the bandage lens and easily pick it off the eye. German stainless. | - 100 |
| | Item # 98653 KARPECKI Debrider The instrument has a slightly curved tip with a "crisp" edge on both sides. The edge is just right to remove the keratin easily by sliding the instrument, curve forward, along the | |

















Where do steroids fit into your dry eye treatment?

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Do you recommend any homeopathic products?

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Other Treatments

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 Thermal expression

 Image: State of the state









Vector Thermal Pulse Technology



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Display Constraints 9. Non-laser high intensity light source 14 High-output flashlamp to produce broad wavelength of non-coherent light 12 Light pulse produced by electrical current passing through a xenon gas-filled chamber 15 Energy pulse opes through a sapphire or quartz block 16 Operator controls: duration, intensity and spectral distribution

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foot.c















Case History

- 58 y.o. Caucasian female • CC: F.B. sensation & Epiphora • Slight blur (20/20 -2)
- Slight redness





Epiphora

- SLEx finding
- Conjunctivochalasis
- Trichiasis
- Foreign body etc
- Nasolacrimal sac obstruction
- Lid Laxity conditions- ectropion • Dry Eye



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Initial Treatments

• Hyperosmotic agents • Muro 128 ung & gtts

Bandage contact lens
 Non-lonic vs. silicone hydrogel

Courtesy of Paul Karpecki, OD, FA

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eatment

• Daytime meds?

• What about hyperosmotic drops?

Hyperosmotic gtts up to QID

Courtesy of Paul Karpecki, OD, FAA

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Treatment
 What medications should be avoided?
 Bland Artificial Tear Ointments

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Effective Treatments

Steroids such as loteprednol
 Q.I.D. x 2 wks then BID x 6 wks

P.O. Tetracycline

Doxycycline 50 or 20 mg bid x 2 months

Dursan D. et al. Tratathenet of recultionan recurrent conneal ensisten with inhibitors of matrix metallisproteinase-9 doxycycline and corticosteroids Ophthal 2001 July Courtesy of Paul Karpecki, OD, FAAO



Cause of Sliding Epithelium?

• Metalloproteinases which cleave Bowman's layer below the anchoring system (Hemidesmisones)

Develop through the production of Leukotrienes

Courtesy of Paul Karpecki, OD, FAAO









New Treatment for Recalcitrant RCE

- Hyperosmotic ung x 2 mo
- Hyperosmotic drops tid x 2 mo
- Loteprednol qid x 2 weeks then bid x 6 weeks
- Doxy 20 mg PO BID x 2 mo
- Courtesy of Paul Karpecki, OD, FAA

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Long Term or other options?

- Cyclosporine ophthalmic emulsion, 0.05%
 Lifitegrast ophthalmic solution, 5%
 Cyclosporine ophthalmic solution, 0.09%
- Nutritional Supplements • EPA/DHA + GLA

Azithromycin

*All shown to inhibit MMP-9

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Other Options for Recalcitrant Cases:

- Bandage Contact Lens
- Stromal Puncture
- Phototherapeutic Keratectomy (PTK)
- Autologous serum
- Amniotic membrane (cryopreserved)

Courtesy of Paul Karpecki, OD, FAAO



Conclusions

- The DDx for recurrent corneal erosion goes well beyond trauma
- 46% of cases are EBMD
- The location of epithelial breakdown helps in the DDx
- New therapies for recalcitrant cases

