THE RISE AND FALL OF DRY EYE DISEASE!

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CHRONIC DISEASE

• Public Health challenge of 21st century
• Over 75% of health care $ goes towards management of Chronic disease
• Linked to modifiable lifestyle risk factors, Smoking, Diet, Activity levels and Alcohol consumption

HEALTH AND WELLNESS (W.H.O.)

• State of complete Physical, Mental and Social well being in the absence of disease
• Wellness is Active and includes Prevention thru maintaining healthy life style, smoking cessation, annual physicals, eye exams, therapies to manage chronic disease

SUCCESSFUL WELLNESS AWARENESS IN EYE CARE

Age-Related Macular Degeneration
• Identifying and modifying risk factors
• Diet and Nutrition/Lutein and Zeaxanthin/Omega 3s
• Sun protection
• Smoking cessation

NATIONAL EYE INSTITUTE

• Over 30 million people are expected to suffer from Dry Eye between 2015-2025
• Estimated 5 million Americans 50 years of age and older are thought to have Dry Eye.

2016 CONTACT LENS SPECTRUM DRY EYE DISEASE REPORT

• March-May 2016 survey of 203 ECPs
• 39% of patients report DE symptoms (Up from 33% in 2014)
• 69% due to Evaporative DE (Up from 59% in 2014)
What are the Preferred DIAGNOSTIC TESTS?

23% prefer TEAR BREAKUP TIME (TBUT)

- Normal > 10 sec
- Moderate between 5-10 sec
- Low < 5 sec

20% prefer SYMPTOMS ASSESSMENT

- 30% of respondents use a formal questionnaire
- SPEED questionnaire
- Evaporative DE
- OSDI – Ocular Surface Disease Index
- Aqueous Deficient DE

12% prefer MGD ASSESSMENT

- Gland expression
- Gland imaging
  - Oculus Keratograph® 5M
  - Lipview- tear science

OCULUS KERATOGRAPH® 5M

- R scan - bulbar and limbal redness
- Tf scan - measurement of the tear meniscus, lipid layer and tear film dynamics
- Melibo scan – identifies morphological changes in the glandular tissue

LIPIVIEW II OCULAR SURFACE INTERFEROMETER

- Visualization of the lipid layer
- Captures blink dynamics
- Images meibomian gland structure

11% prefer CORNEAL STAINING

- Andrasko staining grid
- Which dyes?
  - Fl/LG/Rosebengal
OTHER ASSESSMENT TESTS

- Tear quality – 8%
- Assess lid margins – 3%
- Tear osmolarity – 3%
- Conjunctival staining – 2%

MEIBOMIAN GLAND DYSFUNCTION

- Primary cause of Evaporative DE and leading cause of DE
- Evaluation of Meibomian Glands
- Examination of Lipid Layer of tear film
- 41% of docs report expressing meibomian glands in “most” of their non-CL wearing patients (Up from 25% in 2014)

Meibomian Gland Dysfunction

- 86% of patients with Dry eye patients have MGD
- 50% of acne rosacea patients may have MGD
- 63% of cataract patients have unstable tear film
- 50% of CL patients complain of ocular discomfort

MGD

- Functioning oil gland secretion
- No oil gland secretion

MGD RISK FACTORS

- Over age 40
- Wearing Eye makeup and Eye liner
- Wearing Contact Lenses too long
  (Research shows possible alteration in MG)
- Poor Eyelid hygiene

MGD RISK FACTORS

- Certain prescription medications
  - Retinoid acid (acne treatment)
  - HRT (Hormone replacement therapy for menopausal women)
  - Antidepressants and antihistamines
- Endocrine disorder, like being pregnant or going through menopause.
- Immune system disorders such as acne rosacea, psoriasis, rheumatoid arthritis and Sjogren’s syndrome.
DEFINING DRY EYE

2017 INTERNATIONAL DRY EYE WORKSHOP II (DEWS II)

“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 abnormalities play etiological roles.”

SYMPTOMS OF DRY EYE

• 9 in 10 sufferers consider their symptoms bothersome
• Discomfort – stinging, burning, grittiness, itching, watering, dryness, pain, redness
• Poor quality of vision – intermittent blur, fluctuation of vision, decreased contrast, glare

MULTIFACTORIAL CAUSES

• Environment (cold, windy, Winter)
• Allergies
• Digital device use
• Contact lens wear
• Makeup application and removal
• Systemic disease
• Systemic medications

DIGITAL DEVICES AND DRY EYE

• 65% of all adults and 50% of kids use 5+ hours/day
• Blink 66% less when using a DD
• Decrease in blink rate from 18/min. to 12/min.
• Incomplete blink

• Poor tear film stability
• Increase in tear evaporation
• Decrease in TBUT
• Fluctuating vision and intermittent blur
DIGITAL DEVICES AND DRY EYE
• 20/20/20 rule
• Blink exercises
• Lower height of screen
• Ocular lubricants

CONTACT LENSES AND DRY EYE
• Major cause of CL dropout (remains steady at 20%)
• 50% CL wearers complain of discomfort
• Dailies Total 1 water gradient technology
• Oasys 1 day
• Biotrue
• B&L Ultra
• Biofinity Energys

SYSTEMIC DISEASE
• Auto-immune Disease
• Acne Rosacea
• Sjogren's Syndrome
• Sarcoidosis
• Inflammatory Disease

PATIENT EDUCATION
• CHRONIC and Progressive condition
• Compliance to individualized treatment strategies
• Effect of exposure to elements (wind, dust, sun)
• Effects of digital device use
• Nutrition (Omega-3 supplementation)
• Hormones
• Overall systemic health (Inflammatory conditions and Autoimmune diseases) in the success of their dry eye treatment

TREATMENT OF DRY EYE
LID HYGIENE
• Soaks, scrubs, massage – removes biofilm bacteria
• Bruder Mask
• Ocusoft foam or pads
• Claridex/Sterillid/Blephadex
• Avenova

BRUDER EYE HYDRATING MASK
• Stabilizes tear film, improves gland function and slows tear evaporation
• Medibeads absorb and store air moisture
• Microwave for 20 sec. Stays hot for 5 – 10 mins.
**BRUDER MASK CASE STUDY**

TBUT measured on Oculus Keratograph

**Before:**
- First TBUT at 2.1 sec
- Average TBUT at 3.7 sec

**After:**
- First TBUT at 8.3 sec
- Average TBUT at 12.5 sec

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**OTC ARTIFICIAL TEARS**

- Evaporative DE
- Systane Balance/Refresh advanced
- Emulsions with liquid lipids
- Retaine MGD
- Aqueous deficiency
- Systane Ultra/Refresh Optive
- Preservative free
- Refresh PF

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**2015 RETAINED MGD CLINICAL STUDY**

- **Preservative Free** Oil-based emulsion that’s made to act like a restorative version of your own tear film
- 42 DE patients using Retaine BID
- Statistically significant **Decrease** in:
  - Signs and symptoms of DE, including conjunctival redness "dryness;" "grittiness;" and "ocular discomfort;"
  - Fluorescein staining
- **Increase** in:
  - Ability to work on a computer at night, read at night, drive at night, watch TV at night

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**RX DROPS FOR DRY EYE**

- Xiidra - disrupts inflammatory cascade and treats the signs and symptoms of DE
- Restasis - helps decrease inflammatory nature multi-dose. Preservative-free bottle now available
- Visaid (December 2017)
- Steroids - reduces inflammation for immediate relief

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**TETRACYCLINE DERIVATIVES**

- Minocycline, doxycycline and azithromycin
- Stabilizes the evaporation of tears caused by MGD
- Topical Azasite shown to be equally effective
- Reduces inflammation and growth of lid bacteria

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**DAILY LIFESTYLE MODIFICATIONS**

- Drink water – plenty of water
- Use sunglasses to protect your eyes from cold bitter winds
- Eat foods rich in vitamin A, C and E containing omega-3 fatty acids
- Omega 3 supplements
- Avoid smoking: both active and inactive
- Decrease coffee intake as it acts as a diuretic
DAILY LIFESTYLE MODIFICATIONS

- Use a humidifier in the home to prevent fluid evaporation from the eyes
- Avoid using overhead fans
- Avoid wearing Contact lenses for long periods of time
- If you use a hair dryer to blow dry your hair, avoid pointing it directly at the face.
- Redirect vent in car away from face

THERMAL PULSATION

- Mibaflo (Mibo group)-heats from outside in
- Lipiflow (Tear science)-heats from inside out

Heat helps to liquefy the blocked meibum in the inflammed gland orifice

TRUTEAR

- Handheld device that stimulates the naso-lacrimal gland with electro-stimulation of the Trigeminal nerve (CN V) through the nose
- Able to produce a natural tear on-demand
- May benefit us in our digital age

PUNCTAL OCCLUSION

- Blocks drainage of the eyes
- Natural tears
- Keeps tears on ocular surface longer
- Addresses the quantity but not quality of the tears

AUTOLOGUS SERUM

- Uses patients own serum which contains several anti-inflammatory factors, lysozymes, proteins and enzymes which when present in the tears can inhibit the inflammatory cascade

AMNIOTIC MEMBRANE

- Promotes healing of the ocular surface through regeneration of the epithelial cells
- Reduces inflammation and establishes corneal stability
- Not a long term solution
DRY EYE CHALLENGE

• Ask questions/use questionnaire
• Begin to actively diagnose
• Initiate treatment
• Education – chronic and progressive
• Manage and monitor for life

THANK YOU!!

ANY QUESTIONS??
GREAT TO MEET YOU ALL!

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