

MGD

Joe Barr, OD, MS, FAAO

Emeritus Professor, The Ohio State University

barr.2@osu.edu

Financial Disclosures

Stock holder: Envision, Access Media (not a major shareholder), Tree House, SMM

Consulting - Bausch+Lomb/Valeant, NovaBay (Avenova), Google, Allergan, Vistakon, Alcon

Innovega, Valeant Pharmaceuticals - Contract research

Mutual fund holdings: Novartis, J&J (I do not select these)

Lipid layer prevents evaporation or lubricates

Video

IMPROVING THE SCREENING,
DIAGNOSIS, AND TREATMENT OF
DRY EYE DISEASE

Expert Recommendations From The 2014 Dry Eye Summit

http://www.reviewofoptometry.com/supplement_toc/s/367/

Questionnaires

OSDI

Allergan Dry Eye Zone

SPEED X/28

Korb

The International Workshop on Meibomian Gland Dysfunction:
IOVS March 2011

Meibomian gland dysfunction (MGD) is a chronic, diffuse abnormality of the meibomian glands, commonly characterized by terminal duct obstruction and/or qualitative/quantitative changes in the glandular secretion. It may result in alteration of the tear film, symptoms of eye irritation, clinically apparent inflammation, Michael Stein, M.D., and ocular surface disease.

MGD Differential Diagnosis

The International Workshop on Meibomian Gland Dysfunction:
IOVS March 2011

To the best of our knowledge, there has been no attempt to determine whether ocular surface and/or eyelid symptoms can differentiate between cases of anterior blepharitis or aqueous-deficient dry eye disease and cases of MGD. Nor has the extent to which these conditions occur together, or whether they are separate entities, been well documented.

Population based studies estimate (MGD) prevalence from 3.5% to nearly 70% of the population

Shimazaki J1, Goto E, Ono M, Shimmura S, Tsubota K

Ophthalmology. 1998 Aug;105(8):1485-8.

Meibomian gland dysfunction in patients with Sjögren syndrome.

Shimazaki J1, Goto E, Ono M, Shimmura S, Tsubota K

Destruction of meibomian glands and an increase in tear evaporation often are associated with changes in the ocular surface in patients with SS. Severe ocular surface changes in patients with SS may be attributed, in part, to the meibomian gland dysfunction

MGD - Korb Nov 2014

25 million people in the US and 300 million people worldwide suffer from dry eye disease

Contends that millions of these individuals are incorrectly diagnosed with dry eye and that 86% of those diagnosed actually suffer from Meibomian Gland Dysfunction

Why I love working with Ewen King-Smith

Measuring a few um thick liquid complex with interference phenomena and
Tear film thinning, Break up and Fluorescein

Observation with MGE

Oculus K5M

Topography, Meibomography, Imaging

Meibomography and meibum descriptions

Meiboscale

Grade/ Area of loss

- 1 25% or less
- 2 26-50%
- 3 51-75%
- 4 > 75%

Meibum Types: 3 Clear 2 Colored

1 Semi-solid, Inspissated 0 Blocked Atrophy

Blinking instructions by Don Korb

Non-squeezed to touch

Pause

Squeeze lightly

Open

Repeat

Every hour every day

Katherine Mastrota, OD, MS, FAAO of the Mastrota paddle

Blackie and Korb et al

Hot compress Bundle Method

40 degrees C 104 degrees F

Soak with water and microwave 2 minutes (meat thermometer)

Not massaged

6 minutes, 3 X2 min applications

Coiled face towel

Lid Scrubs continued

Debridement and BlephEx

OCuSOFT, Inc. has launched Retaine PM Nighttime Ointment for relief of severe dry eye.

Designed to keep eyes lubricated and comfortable while you sleep, Retaine PM is a preservative-free, oil-based formula. Retaine PM is packaged in a large, economical 5 gram tube which is 43% larger than traditional 3.5 gram tubes.

Retaine PM joins a growing line of Retaine brand eye care products, including artificial tears and nutritional supplements available through eyecare professionals. Introductory discount pricing is available to practitioners dispensing from their office, however, patients may also order online directly at www.ocusoft.com/retaine.

Hypochlor gel 0.02% hypochlorous acid

For more information, call (800) 233-5469 or visit www.ocusoft.com.

Demodex

Patient complained of itchy eyes, especially at night time. Epilation of two eyelashes from each eye were examined under a microscope and the picture shows an active critter. Demodex mites are known to cause increases in ocular allergies when the lights are turned off because they come out of the lash follicles to lay their eggs. Patient is to begin treatment with tea tree oil shampoo on scalp, Oasis lid foam every night on eye lids and every morning to use Cliradex lid scrubs. Follow up in one month.

Heal the dry eye with anti-inflammatories both pulse steroid short term off label and cyclosporine long term Azithromycin 250mg/day > doxycycline 200mg/day X 5 days,

debride lid margins, hydration, preventing dehydration, omega 3s, lid cleansers, hypochlorous acid, hot compresses, low dose doxycycline, humidify environment, Tx allergic conjunctivitis, watch for dehydrating orals

Blinking training by Korb, Non-squeezed to touch, Pause, Squeeze lightly, Open, Repeat

Repeat, Every hour every day, use eye drops including lipid containing drops, CL drops

Sjö

Early detection of Sjögren's syndrome

- Combines 4 traditional biomarkers with 3 novel, propriety biomarkers
- Helps detect Sjögren's syndrome early in its disease course
- Offers significantly higher sensitivity and specificity than previous screening methods

Valeant Pharmaceuticals/Bausch+Lomb

510 K Clearance

Medical Device

Rx under the supervision of an eye care professional

Indication – “for the removal of foreign material, including microorganisms from the skin”

Hypochlorous Acid .01%

Excellent activity against a broad range of pathogens

Fast acting onset of activity

Effective against pathogens commonly found on the lids & lashes

Dry Eye News

Lid wipes, eye drops QID Systane Balance, 2X1,000 mg Omega 3 fa daily for 3 mos.

MGYLS increase

SPEED score decreased 32 to 14

Vs Warm compress

Note Warm compress did improve

2 AEs

Korb et al.

Shire submits application for Lifitegrast to treat DE in Adults

Small molecule integrin inhibitor

Dry Eye & MGD My story

Teen age rosacea and periodic hordeolums and chalazions

Gritty, gummy, blurred vision symptoms X last 10 years

Driving long hours X 7 years worsened symptoms

Treated at OSU doxycycline, hot compresses, lid scrubs

Self treated with Zylet (OFF LABEL)

Omega 3 fa – I love salmon, nuts and seeds

May 2014 lid margin debridement – substantial improvement

November 2014 Lipi Flow after debridement and follow up tx with Azasite, Omega 3s, Restasis, lid scrubs and Avenova

Use of OTC drops down to ~4/week, less blurring, less symptoms

Identify Dry Eye with InflammADry®

InflammADry® is the first and only, rapid, in-office test that detects MMP-9, an inflammatory marker that is consistently elevated in the tears of patients with dry eye disease.¹ Using direct sampling microfiltration technology, InflammADry® accurately identifies elevated levels of MMP-9 protein in tear fluid samples taken from the inside lining of the lower eyelid, the palpebral conjunctiva.

InflammADry® is a disposable, low cost test, that requires no additional equipment to administer or interpret results. Using four simple steps, InflammADry® test results are achieved in just 10 minutes, aiding in the diagnosis of dry eye before the patient leaves the office.

The TearLab Osmolarity System

- Fast and accurate results in seconds using only 50 nanoliters (nL) of tear
- Enables discussion with patients around a number improving compliance

LipiView

LipiFlow

Interferometer built by Dr. Ewen King-Smith

Soothe XP with Restoryl returns

Bausch & Lomb's Soothe® Xtra Protection (XP) is a lipid-containing artificial tear formulation with wide acceptance among consumers, clinicians, and dry eye experts

New Soothe XP retains key characteristics of the original formula including light mineral

oil 1.0% and mineral oil 4.5%

Comment on punctal plugs

Patient Compliance

Steve Martin (not the actor) and Reciprocity

Persuasion and transferring authority to staff

If they like you they will comply

Educate, re-educate, etc.

Seek to understand and simplify

References

DEWS report,

MGD workshop IOVS March 2011,

IOVS Oct 2013