Blepharitis: Fakten und Mythen

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St. Gallen
Definition & Classification
Definition

- **Blepharitis**
  - Inflammations involving the eyelids and particularly the lid margins

- **Prevalence**
  - 8 - 20% of caucasian population
Classification

**Anterior**
- Staphylococcal
- Seborrheic
- Mixed

**Posterior**
- Primary meibomitis
- Mixed
Pathophysiology

- Bacterial colonisation of the eyelids
  - Direct microbial invasion of tissues
  - Immun system mediated damages
  - Damage caused by production of
    - Bacterial toxins
    - Waste products
    - Enzymes
- Colonisation is increased in presence of seborrheic dermatitis or MGD
Symptoms & Signs
Symptoms

- Burning
- Watering
- Foreign body sensation
- Crusting and mattering of lashes and medial canthus
- Red lids and eyes
- Photophobia
- Pain
- Decreased vision
Associated symptoms

- Seborrheic dermatitis
  - Scalp itching, flaking, oily skin

- Rosacea
  - Rhinophyma, facial flushing, teleangiectasia in the face, pustules, oily skin
Sings

- Erythema and crusting of lashes and lid margin
- Eyelid margin ulcers
- Teleanangectasias and lid irregularity
- Madarosis (loss of lashes)
- Poliosis (whitening of lashes)
- Trichiasis (misdirection of lashes)
- Plugging of meibomian orifices
Symptoms & Signs

- **Staphylococcal blepharitis**
  - Predominantly affects young to middle-aged women
  - Exarbations and remissions
  - Lid margin erythema with
  - Fine ulcerations at the base of the lashes
  - **Collarettes of fibrin along the lashes**
Symptoms & Signs

- **Seborrheic blepharitis**
  - Somewhat older age group, men = women
  - More chronic course
  - **Greasy scales** on the lid margins and lashes
  - Associated meibomian seborrhea with **foamy tears** and teleangiectatic lid margin vessels
Symptoms & Signs

- Primary meibomitis
  - Episodic inflammation of the posterior lid
  - Teleangectasias and lidmargin irregularity
  - **Plugged meibomian orifices** with thick secretions
  - Enlarged and distorted glands
  - Drop-out of glands over time
Symptoms & Signs

- Related corneal findings
  - Punctate epithelial erosions, marginal infiltrates, ulcers and pannus
  - Most commonly at the positions where the limbus is crossed by the lid margins (2h, 4h, 8h and 10h)
Symptoms & Signs

- Demodex mites
  - Demodex folliculorum
    - Anterior blepharitis with sleeves around the lashes
  - Demodex brevis
    - Posterior blepharitis with meibomian gland dysfunction and keratoconjunctivitis
Differential diagnoses
Differential diagnoses

- Basal cell carcinoma
- Contact dermatitis
- Cellulitis
- Conjunctivitis, bacterial, viral
- Keratoconjunctivitis
- Keratitis
- Contact lens complications
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Blepharitis, Elena Catalano
Workup

- Biopsie!
Treatment
Treatment

- Systematic and long-term programm of eyelid margin hygiene

- 3 essential steps
  - 1: application of heat (and massage)
  - 2: the eyelid margin is washed mechanically
  - 3: AB ointment is applied to the lid margin
Treatment

  - Warm compresses and lid massage up to 4 times per day for 15 minutes (KSSG 2x/d)
  - Topical antibiotic ointments for moderates to severe cases
  - Adjunctive use of lubricants in cases of additional dry eye disease
  - Systemic tetracycline for 6 weeks to several months in recurrent cases
  - To consider topical steroids for a short term in severe cases
Evidences

- Metaanalysis of 34 studies (RCTs and CCTs) with 2169 participants
  - Topical AB provide some symptomatic relief and are effective in eradicating bacteria in anterior blepharitis
  - Lid hygiene provides symptomatic relief for anterior and posterior blepharitis
  - The effectiveness of other treatment (topical steroids and oral AB) were inconclusive!

Lindsley et al. Interventions for chronic blepharitis, Cochrane Database Syst Rev. May 2012
Evidences

- **Topical Azithromycin (Azyter Thea Pharma EU)**
  - Phospholipidosis-inducing AB
    - Accumulation of Cholesterol and Phospholipids in MG epithelial cells
  - Significant improvement in
    - MG plugging and secretions
    - Eyelid redness
    - Overall symptomatic relief

References:
- Liu Y et al. One man’s poison is another man’s meat: using azithromycin-induced phospholipidosis to promote acular surface health. Toxicology June 2014
Evidences

- **Tetracyclines**
  - First proposed for the treatment of the cutaneous manifestations of acne rosacea in 1966
  - Are mainly used for their anti-inflammatory and lipid-regulating properties
  - Minocycline 100 mg has been shown
    - to reduce the population of lid flora in rosacea patients
    - And to inhibit their production of lipases hence the release of proinflammatory free fatty acids and diglycerides at the lid margin and ocular surface

Ta CN et al. Effects of minocycline on the ocular flora of patients with acne rosacea or seborrheic blepharitis. Cornea 2003
Shine WE et al. Minocycline effect on meibomian gland lipids in meibomianitis patients. Exp Eye Res. 2003
Evidences

- Tea tree oil (50% lid scrub or 5% lid massage)
  - shows promising potential to treat Demodex blepharitis
    - By reducing demodex counts
    - Additional antibacterial, antifungal and antiinflammatory actions

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Evidences

- Oral ivermectin (200 ug/Kg, 1 Dose at day 1 and 8)
  - Noncomparative interventional case series
  - Reduction in the absolute number of D. Folliculorum in the lashes
  - Improvement of Schirmer test and BUT

Evidences

- While there are several published treatment options available, none of these options seem to be clearly effective in Demodex blepharitis
  - TTO 5% vs. TTO 0.02% vs. metronidazole ointment vs. ivermectine vs. oral metronidazole

Evidences

- **LipiFlow (thermal pulsation system)**
  - FDA-approved July 2011
  - Applies heat to the palpebral inner surface of upper and lower lid
  - While simultaneously delivering graded pulsatile pressure to the outer eyelid surface
  - 12 min in-office procedure
  - Relieved meibomian gland obstruction
  - Improved
    - Meibomian gland secretion quality
    - Tear film stability
    - Patient comfort
  - Sustained long-term efficacy of up to 9 months following a single LipiFlow treatment

Lane et al. A new system, the LipiFlow, for the treatment of meibomian gland dysfunction. Cornea 2012
Geiner JV. A single LipiFlow thermal pulsation system treatment improves meibomian gland function and reduces dry eye symptoms for 9 months, Current Eye Res 2012
Conclusions

- Heat
- Lid margin hygiene (ev. Tea tree oil)
- Local AB (anterior blepharitis)
- Oral AB in Patients with Rosacea
- Lokal AB-Steroid combination for chalazia or corneal involvement
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Thank you!