Itchy eyes – a little irritation or a big pain

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Declaration of any conflicts of interest

• None
Allergic Eye Disease

• Group of disorders
• Hypersensitivity reaction → inflammation ocular surface
• Itch
• Includes the atopic disorders, GPC and contact allergy
• Includes sight threatening disorders VKC and AKC and less serious e.g. hayfever
Seasonal & Perennial Allergic Conjunctivitis: SAC & PAC

• Very common
• Similar: time course dep on allergen exposure
• SAC (hayfever): pollen: seasonal
• PAC: dust mite, animals, mould: all year
Symptoms

• Itchy, watery, sticky, red
• Little-no visual disturbance
• Timing: seasonal, diurnal
• Other atopic disease: rhinitis (nose), asthma, eczema, urticaria (hives)
Signs

• Mild-mod diffuse conjunctivitis
• Redness, oedema & infiltration (thick, opaque)
• Small papillae
• Chemosis & lid swelling, esp after acute allergen exposure or rubbing
• No scarring
• Normal limbus & cornea
Rx & Prognosis

- Mainly by non-ophthalmologists
- Allergen control & desensitisation
- Topical & systemic antihistamines
- Topical mast cell inhibitors
- No threat to vision
- Often lessens with age
- Generally no need to refer unless struggling to control
Vernal keratoconjunctivitis: VKC

• Much less common in UK than SAC and PAC but common enough and often missed if not too severe
• More common & serious hot dry countries
• Children esp male
• Often a seasonal component
Symptoms

• Itch++, discomfort, photophobia, stringy discharge, inability to open, blurred vision
• Seasonal/perennial
• Atopy: asthma, eczema
Signs

• Max sup tarsal & limbal conjunctiva
• Redness, oedema, infiltration
• Papillae (may be giant/cobblestones)
• Fine scarring
• Limbitis: diffuse/papilliform/Trantas’ dots
• Stringy thick exudate
• +/- Ptosis
Keratopathy = corneal disease

- Episodic
- Punctate fluorescein stain
- Epithelial defect
- Plaque ulcer
Rx & Prognosis

- Refer to ophthalmologists
- Mast cell inhibitors, mucolytics
- Topical steroids
- Topical cyclosporin
- Rarely systemic steroids
- Topical antibiotics if epithelial defect
- Surgery for plaque after aggressive medical treatment
- Usually resolves spontaneously puberty – early twenties
- <5% go on to adult AKC
Atopic keratoconjunctivitis: AKC

• Uncommon, severe
• Severe eczema (esp face)/asthma
• Previously mainly adults in UK
• Increasingly in children esp Asian where mixed AKV/VKC picture
• Less seasonal component especially in adults
Symptoms

- Severe itch, discomfort/pain, watery, sticky, red
- Lid skin red & sore
- Blurred vision
Signs

• Often facial/eyelid eczema
• Marked ant/post blepharitis with chronic changes e.g. notching, loss lashes & pigment, ectropion/entropion, keratinisation
• Diffuse severe conjunctivitis with infiltration, papillae, scarring & shrinkage
• Limibitis++
• Secondary dry eye
Keratopathy

- Frequent complication, progressive
- Punctate stains & epithelial defects
- Plaque ulcer
- Scarring & neovascularisation
- Thinning & perforation
- Secondary infection (herpetic, bacterial, fungal)
Treatment

• Refer to ophthalmologists
• Aggressive Rx facial/lid eczema
• Aggressive Rx blepharitis
• Topical mast cell inhibitors, mucolytics, art tears
• Topical steroids
• Topical cyclosporin
• Topical ABi as necessary
• Systemic steroids & cyclosporin
• Corneal surgery (high risk)
Giant papillary conjunctivitis: GPC

• CL-ass papillary conjunctivitis or foreign Body-ass papillary conjunctivitis
• Mild forms common
• Chronic ocular surface FB: CL (soft > GP), ocular prostheses, sutures, buckle
• ?? Atopy
Treatment & prognosis

• Non-drug mostly: optometrists
• Lens hygiene
• Fit
• CL condition
• Disposable regime
• Reduce wearing time
• Mast cell inhibitors
• Prognosis good: can cure if no CL wear!
Contact blepharoconjunctivitis: ConBC

- Reaction to locally applied substance: drops, cosmetics, CL solutions
- Immune vs toxic (e.g. alkali, gentamycin, preservatives)
- Can develop to drops previously used without problem
Symptoms

• Itch++, red, watery
• Red sore lid skin
• Minor blurring
• Can be acute or low grade
Signs

- Max inferior bulbar & tarsal conjunctiva
- Redness, oedema, follicles
- Lid skin dermatitis, esp. lower lid
- Mild punctate stain cornea
Treatment & Prognosis

• Mainly non-specialist if recognised
• Removal cause will cure
• Occasionally require patch testing
• Avoid over the counter preparations
• Unpres art tears
• Unpres topical steroids
• Steroid cream to skin
• Prognosis excellent once diagnosed!
Pathophysiology

• SAC & PAC: type I hypersensitivity to specific allergen(s): IgE antibody binds to mast cells which degranulate to release histamine, PGs, LTs, cytokines. Eosinophil infiltration.

• VKC and AKC: type I hypersensitivity involved, also type IV with Th2 lymphocyte chronic inflammation; eosinophil granule proteins toxic to corneal epithelium; scar tissue replaces normal tissue
The Dx of allergic eye disease is nearly always by clinical recognition and rarely do Ix help management

• IgE:
  • Total serum IgE: atopy & variable
  • Specific serum IgE: by skin prick test or RAST, not directly correlated with eye reactions
  • Total tear IgE: high but can be just atopy
  • Specific tear IgE: correlates, usu exptl

• Allergy tests:
  • Skin prick
  • Ocular challenge

• Cytology
  • Scrape/smear
  • Impression cytology
  • Tears

• Biopsy
• Tear mediators
Management

• Information
• Allergen control
• Non-specific medical Rx
• Antihistamines
• Mast cell inhibitors
• Steroids
• Cyclosporin
• Surgery
Information

• Rx vs cure
• Prognosis
• Severity in medical terms
• Risks vs benefits Rx (e.g. steroids)
• Information sources: allergy groups
Allergen control

• Only possible if allergen easily identifiable
  • Pollen
  • House dust mite
  • Pets
  • Mould

• Desensitisation: SAC & PAC
Non-specific medical therapy

- Cold compresses
- Artificial tears
- Mucolytics (acetylcysteine)
- Topical antibiotics
- Rx eczema
- Rx blepharitis: hygiene, ABi/steroid ointment, oral long term antibiotics
Antihistamines: topical

- Useful for type I disorders: SAC, PAC
- Rapid onset, limited potency, no prevention
- With vasoconstrictor: e.g. otrivine-antistin
- Without: e.g. levocabastine, emedastine, ketotifen, azelastine
-Usu bd - qds
Antihistamines: oral

- SAC & PAC
- Help control associated rhinitis
- Useful in children
- Risk poss side-effects: Some are sedative; anticholinergic (dry mouth); occ more serious
Mast cell inhibitors

- Topical, inhibit mast cell degran i.e. earliest phase of response therefore preventative & more potent
- May take few days to work
- Very safe
- Useful in all disorders
- Steroid-sparing in AKC/VKC
Mast cell inhibitors

• Sodium cromoglycate
• Sodium cromoglycate unpreserved
• Nedocromil
• Lodoxamide
• Bd-qds, newer greater potency, faster action, less stinging
Combination: mast cell/anti histamine

• Olopatadine: high potency antiHA and mast cell inhibition, for SAC and PAC and steroid sparing for VKC and AKC

• BD use really helps with compliance
Steroids

• Very effective but side-effects
  • glaucoma, cataract, infective (esp herpetic) keratitis
• Avoid if possible in SAC & PAC
• Careful in children – difficult to check for SFx
• VKC and AKC often required esp in keratitis
• Minimise risk: hit hard then get off them; otherwise low conc & as infreq as possible; surface acting (FML, rimexolone, loteprednol)
• Use all other Rxs and DON’T STOP to reduce steroid requirements
• Systemic occasionally in AKC & VKC, effects on systemic disease
Cyclosporin

• Immunosuppressive vs T lymphocytes
• 2% in oil effective in VKC & AKC, steroid-sparing, special manufacturing, stingy++
• 0.2% vet ointment
• 0.05% emulsion
• Now 0.1% (1mg/ml) Ikervis licensed for dry eye
• BD – QDS long term prevention
• No systemic effects, mild local side-effects
Surgery

• Corneal disease in VKC, AKC
• Plaque: medical Rx, superficial keratectomy
• Scarring/thinning/perforation:
  • Glue
  • Penetrating keratoplasty
  • Lamellar keratoplasty
  High risk
Don’t forget the amblyopia!
When to treat

• SAC & PAC
• Very mild VKC
• GPC
• Con BC
• Diagnosis clear
• No steroid use
When to refer

• Allergist
  • To Ig allergen
  • Desensitisation: severe SAC/PAC poor response to usual therapies

• Ophthalmologist
  • Corneal disorders: AKC, VKC
  • Conjunctival scarring
  • Severe lid involvement
  • Steroids required: monitor SFx
  • Unclear diagnosis
  • Unresponsive
Thank you

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