DRY EYE SYNDROME TREATMENT GUIDELINES

Dry eye disease affects up to 8% of the general population, 78% of who are post/menopausal women. Other contributing factors include:

- Long-term contact lens use
- Concomitant use of medication (e.g. antidepressants or antihistamines)
- Exposure to extremes of weather; air conditioning exposure
- Smoking
- Excessive exposure to some visual activities (e.g. computer use, TV viewing or prolonged reading)
- Autoimmune diseases

A key principle for the management of dry eye disease is augmentation of the tear film through the topical administration of artificial tears. These products enhance tear stability thus reducing loss by evaporation; retaining moisture in the eye. This relieves the chronic ocular inflammation associated with dry eyes. Artificial tears help to reduce patient discomfort, improve quality of life and reduce the risk of damage to the corneal epithelium.

The DEWS[3] report (peer reviewed guidance which is the accepted main reference source) concluded there is no evidence to suggest that any one agent is superior to another. However, ocular surface inflammation can be exacerbated by the presence of preservatives such as benzalkonium chloride and evidence suggests that it can destabilise the tear film and also damage the epithelial cells.

Preservatives

In patients with mild dry eye, benzalkonium chloride containing products may be well tolerated, whereas, in patients with moderate to severe dry eye, the potential for benzalkonium chloride toxicity is much higher due to decreased tear secretion. The risk of toxicity to preservatives also increases in those people who are using other preservative containing topical eye preparations. Preservatives and other excipients such as cetrimide can accumulate on the surface of the contact lens and may cause irritation and possible damage to the surface of the eye. Note that irritation can still occur with PF drops due to other excipients.

Other formulations contain what have been described as 'vanishing' preservatives, for example sodium chlorite or sodium perborate. In higher concentrations, sodium perborate has been reported to be an eye irritant. For patients with severe dry eye, vanishing preservatives may not totally degrade, due to a decrease in tear volume, and may be irritating.

Contact lens wearers

Preservatives and other excipients such as cetrimide can accumulate on the surface of the contact lens and may cause irritation and possible damage to the surface of the eye. Note that irritation can still occur with PF drops due to other excipients.

PRESERVATIVE FREE formulations should be prescribed for patients with:

- True preservative allergy (as diagnosed by specialist)
- Evidence of epithelial toxicity from preservatives
- Soft contact lenses wearers
- Long term treatment >3/12 or frequency > 6 times daily
- High risk patients e.g. corneal graft
- Severe dry eye conditions
- Concurrent topical therapy for other eye conditions

References

1. www.dryeyesmedical.com
2. http://www.dryeyesmedical.com/research.aspx
3. *The Ocular Surface*, 2007, pp.77. 2007 Report of the International Dry Eye Workshop (DEWS). [Online] Tear
4. Film and Ocular Surface Society. Available at: www.tearfilm.org/dewsreport
5. *MIMS* December 2014
6. www.cmu.nhs.uk
7. Moorfields Eye Hospital NHS Foundation Trust Formulary November 2014

DRY EYE SYNDROME TREATMENT GUIDELINES

Does the patient have:
Known sensitivity to preservatives OR Wears Soft Contact lenses

NO

Mild Dry Eye

1st Line: Hypromellose 0.3% drops generic (£1.12)
If this doesn't provide sufficient relief consider either a carbomer or carmellose.
2nd Line: Either Carbomer 980: e.g. Clinitas® 0.2% carbomer gel (drops, £1.49)

3rd Line: Carmellose 0.5% e.g. Optive® drops (£7.49)

YES*

Mild Dry Eye

1st Line: Hypromellose 0.3% PF: Tear Lac® drops (£5.75)
If this doesn't provide sufficient relief consider either a carbomer or carmellose.
2nd Line: Carbomers PF: e.g. Viscotears® liquid gel (drops) SDU (£5.42)

3rd Line: Carmellose 0.5% PF: e.g. Melophthal® drops SDU (0.5%, £5.75) or PF Drops® Carmellose SDU (0.5%, £7.49)

Apply qds for a period of 8 weeks. Emphasize compliance.
If first course fails, try another product from the above category for another 8 weeks

Moderate Dry Eye

1st Line: Sodium Hyaluronate 0.1% PF: e.g. Hylo–Tear® drops 0.1% (£8.50)/Lubristil drops (£4.99)
2nd Line: Carmellose 1%: e.g. Melophthal® drops SDU (1%, £3) or PF Drops® Carmellose (1%, £7.49)
OR Carbomer 980: Clinitas® 0.2% carbomer gel (drops, £1.49)

Moderate Dry Eye

1st Line: Sodium Hyaluronate 0.1% PF: e.g. Hylo–Tear® drops 0.1% (£8.50)/ Lubristil drops (£4.99)
2nd Line: Carmellose 1% PF: e.g. Melophthal® drops SDU (1%, £3) or Carmellose SDU drops (1%, £3)
3rd Line: Carbomers PF: e.g. Viscotears® liquid gel (drops) SDU (£5.42)

Severe Dry Eye

1st Line: Sodium Hyaluronate 0.1% PF: Hylo–Tear® drops 0.1% (£8.50)
2nd Line Sodium Hyaluronate 0.2% PF: Hylo-Forte drops 0.2% (£9.50)
3rd Line: Liquid Paraffin: e.g. Xailin Night® ointment (£2.49) or VitA-POS® ointment (£2.75) – should be applied at night

Severe Dry Eye

1st Line: Sodium Hyaluronate PF: e.g. Hylo–Tear® drops 0.1% (£8.50)
2nd Line Sodium Hyaluronate PF: Hylo-Forte drops 0.2% (£9.50)
3rd Line: Liquid Paraffin: e.g. Xailin Night® ointment (£2.49) or VitA-POS® ointment (£2.75) – Applied at night

No evidence to suggest any differences in efficacy between the different strengths of sodium hyaluronate.

Failure to respond to 3rd Line Treatment - Refer to an ophthalmologist	
Symptoms of mild to moderate dry eyes:	**Dryness, scratchy, gritty, foreign body sensation, burning, redness**
Suspect severe dry eyes if:	**Constant redness, photophobia, impaired vision, history of dry mouth, history of autoimmune disease/vasculitides or Sjogren's syndrome, trouble keeping their eyes open/blepharospasm, filaments on the surface of the eye**

RESTRICTED (Secondary Care Initiation)	
Acetylcysteine 5% (Ilube®) drops is licensed, 10%, 20% and PF are all unlicensed specials	**Tear deficiency, impaired or abnormal mucous production**
Ciclosporin 0.2% ointment, 0.05%, 0.06%, 2% eyedrops PF are all unlicensed specials. Amber Fact sheet available.	**For severe dry eye, graft rejection, severe vernal conjunctivitis, some immune mediated disorders**
Sodium Chloride 5% PF eye drops (PF Drops® Sodium Chloride 5%)	**For corneal oedema, recurrent corneal erosion syndrome**

Note: Patients should be informed of preparations which have a longer expiry after opening. This will ensure any drops remaining after 28 days are fully utilised. 'A 10ml preparation used as one drop BD in both eyes should effectively last up to 2 months'
***See notes above for more information on patients that require preservative free preparations.**
SDU= Single dose unit **Prices valid as of April 2016**