**Clinical Pharmacy**

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**Minor Eye Disorders Part 2:**

**Dry Eye**

Dry eye is among the most common disorders affecting the anterior eye (5).the condition **is chronic with no cure** (1).

Essentially, a reduction in tear volume or alteration in tear composition causes dry eyes. Underproduction of tears can be the result of increased evaporation from the eye, increased tear drainage and a decrease in tear production by the lacrimal gland (1).

**Patient Assessment with Dry Eye:**

**A-Age:** Dry eye is most often associated with **aging process**, especially postmenopausal women (5). **Dry eye is rare in children and required referral** (1).

**B-Symptoms:** Usually affecting both eyes. Symptoms that are frequently reported are eyes that **burn, feel tired , itchy, irritated (**decreased tear production results in irritation and burning) **or gritty** and **feel as if something is in the eyes** (1, 6).

**C-Clarifying questions:** Have you had daily, persistent, troublesome dry **eyes for more than 3 months**? Do you have a **recurrent** **sensation of sand or gravel in the eyes**?

A positive response to at least one of these questions would indicate dry eye syndrome (1).

**D-Associated Symptoms:**  **Normally no other symptoms are present in dry eye**. If the patient complains of a dry mouth, check for medication that can cause dry mouth (table -4). If medication is not implicated, then symptoms could be due to an autoimmune disease (1).

Sometimes the lower eyelid turns outward (a condition called **Ectropion**), this will over expose the conjunctiva to atmosphere leading to eye dryness. Referral is required (1).

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| **Table -4: Medication that can cause dry eye** (1). |
| -Diuretics  -Drugs that have an anticholinergic effect – e.g., tricyclic antidepressants (TCAs) and antihistamines  -Isotretinoin  -HRT (particularly oestrogen alone)  -Androgen antagonists  -Cardiac arrhythmic drugs, beta-blockers  -Selective serotonin reuptake inhibitors (SSRIs) |

**Management:**

1-Dry eye are managed by instillation of **artificial tear preparations.** They act by stabilizing the tear film and decreasing tear evaporation) (5).

2-Drops can be divided into those which contain a **preservative and those which do not ( i.e. preservative free).**

The preservative is nearly always **benz­alkonium chloride**,

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| **When to refer (1)** |
| -Associated dryness of mouth and other mucous membranes  -Outward turning lower eyelid |

usually present at 0.01 per cent. Preservatives **can damage the corneal epithelium.** If a patient is likely to be using artificial **tears for a long time**, a preservative-free prepara­tion should be considered (6).

**Also**: benzalkonium chloride **itself can cause eye irritation**. If symptoms persist, or are worsened by the eye drops, it may be worth trying a preservative-free formulation or single-dose unit preparations (1).

3-The dosage of all products marketed for dry eye is largely dependent on the patient’s need for lubrication, and is **therefore given on an as-needed basis** (1).

4-All products are **pharmacologically inert and none are known to interact with any**

**medicine**, only cause minimal and transient side effects and can be given to all patient groups (1).

**Examples** of the compound used are:

**1-Hypromellose (hydroxypropylmethylcellulose):** (Tears Naturale ® eye drop)

**2-Polyvinyl alcohol** (Liquifilm Tears® eye drop)

Patients with **mild** dry eye may benefit from instillation of one of these artificial tear drops up to **four times** a day. However, in **moderate to severe** cases, these preparations need to be instilled more frequently (7).

**3-Carbomers**: (Liquivisc ® Gel : Viscotears ® gel): To overcome the problem of frequent instillation , preparations containing **a longer-acting polymer**, known as **carbomer** , have been introduced. Such preparations have a much longer retention time in the eye and symptom relief is obtained with **significantly fewer instillations** (7).

Due to the products’ viscosity properties, carbomer **should be used last** if other eye drops need to be instilled (1).

**4-Lubricating ointments:** Ophthalmic lubricating ointments contain white **soft paraffin (**Lubri-Tears ®Eye ointment), **lanolin and liquid paraffin**. These preparations **melt at the temperature of the ocular tissue** and are retained longer than other ophthalmic vehicles. They are not generally recommended as tear substitutes during **the day because the vision is blurred after instillation**. They are, however, a useful adjunct to artificial tears **if used at bedtime** (7).

**5-Sodium hyaluronate**

The dosage for all products containing sodium hyaluronate is **on an as needed basis** (1).

**3-Eyelid Disorders:**

**A-(Stye and Chalazion):**

**Styes** are caused by bacterial infection and can either be external (outside the surface of the eyelid) or internal (in the inner surface of the eyelid) (1). Internal stye generally has a more prolonged course than external (8).

Occasionally, internal stye can evolve into **Chalazion** (a granulomatous inflammation that develops into a **painless lump**) (1).

A chalazion can be confused with a stye. **Stye often has a head of pus** at the lid margin and will **be tender and sore**, whereas a chalazion presents as painless lump (1).



Although styes are caused by bacterial pathogens the use of antibiotic **therapy is not usually needed**. Topical application of ocular antibiotics does not result in speedier symptom resolution (1).

Patient with stye should avoid **touching the eyes and wash the hands** after any contact with infected eye (8). Without treatment, a stye will usually re­solve within seven to 14 days (8).

A warm compress applied **for 5–10 minutes three or four times** a day might bring to a head an external stye, and once it bursts the pain will subside and the symptoms will resolve (1) (External stye usually drains spontaneously, but warm compress will hasten resolution which usually occurs within 48 hours). Internal stye generally resolves within 1-2 weeks (8).

A chalazion is self-limiting, although it might take a **few weeks to resolve completely** (1). Initial treatment for chalazion is similar to that of stye especially for small chalazion (warm compress applied several times a day. About 25-50% resolves with this treatment. If the lesion does not begin to resolve within few days, referralis required (8))

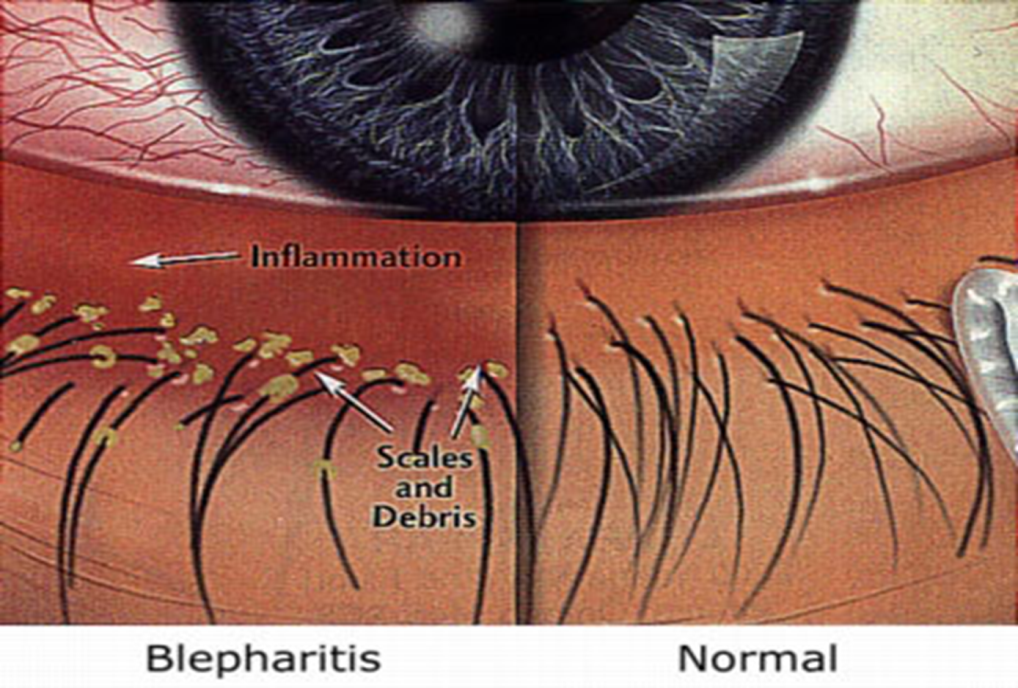
If the patient complains that it is particularly **bothersome** and is affecting **vision** or associated with eye **pain**. Referral in these circumstances is needed for surgical removal (1, 8).

**B-Blepharitis:**

Blepharitis is chronic inflammation of the lid margins, affecting both eyes (9).

**Signs and symptoms:**

1- Typically Blepharitis is **bilateral** (1).The **lid margins appear red**, with irritation, burning and itching (9).



2-**Scales are frequently seen on the lashes of both upper and lower lids**, which tend to be greasy in seborrhoeic blepharitis (9). (excessive crusty debris or skin flakes around the eyelash) (1).

3-**Lashes are frequently lost** or may be distorted, turn inwards and rub on the cornea; this in turn can cause conjunctivitis (9).

**Patient Assessment with blepharitis**

**A-Other existing conditions:**

Patients who suffer from blepharitis often have a co-existing skin condition, such as **seborrhoeic dermatitis** or **rosacea** (1).

Patients with swollen eyelid and associated feeling of being unwell required referred (1).

**B-Duration:**

A long standing history of sore eye is indicative of blepharitis or dry eye syndrome (1).

**C-Eye involvement:**

Conjunctivitis is a common complication of blepharitis (1).

**D-Recent use of products:**

Many products (especially cosmetics) can results in itching and flaking skin that mimics blepharitis (1).

**E-Medication:**

**Failed medication** required referred (1).

**Management**

The goals of treatment are to reduce the discomfort and inflammation associated with blepharitis and to reduce the risk of recurrence of severe symptoms (8).

The mainstay of treatment for blepharitis is improved **lid hygiene** (1).

1-First, the eyelids should be cleaned using a warm compress applied to closed eyelids for 5-10 minutes (1, 8) (This step softens gland secretions and promotes evacuation and cleansing of secretory passages) (10). A diluted mixture of baby shampoo (1:10) with warm water should then be applied to the eyelids using a cotton bud. This should be done twice a day initially and can be reduced to once a day if symptoms improve (1).

2-Failure to respond to hygiene measures requires referral (1) (an improvement would be expected **after four weeks**) (6).

**4-Subconjunctival hemorrhage**

The rupture of a blood vessel under the conjunctiva causes Subconjunctival hemorrhage. A segment or even the whole eye will appear **bright red**. Most sub­conjunctival hemorrhages are **idiopathic** (It occurs **spontaneously**) but can be precipitated by coughing, straining or lifting (1). The patient will wake up with the hemorrhage, which is not noticed until he or she looks in a mirror (11).

**The condition appears alarming but is usually harmless** (11). There is no pain and the patient should be reassured that **symptoms will resolve in 10 -14 days without treatment**. However, a patient with **history of trauma should be referred** to exclude ocular injury (1).

Hypertension is also a possi­ble cause so pharmacists can advise patients to have their **blood pressure checked**. Anticoagulant or antiplatelet drugs (e.g. warfarin, aspirin, clopidogrel) can also cause a hemorrhage so patients should **be asked about their medicines** and those taking warfarin should have their international normalized ratio ( INR ) measured (11)

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