Optometrists Formulary

THE COLLEGE
OF OPTOMETRISTS

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Optometrists' Formulary Background Notes

The following notes on the legislative framework governing the use and supply of medicinal products by optometrists are taken from:
http://www.mhra.gov.uk/Howweregulate/Medicines/Availabilityprescribingsellingandsupplyingofmedicines/ExemptionsfromMedicinesActrestrictions/Optometrists/CON009694

For guidance on the use and supply of drugs and medicines in optometric practice optometrists are referred to in Section K01 of the College's Code of Ethics and Guidance for Professional Conduct. Prescribing optometrists are also referred to the College Guidance for Optometrist Prescribers, which gives more detail as to prescribing optometrists' responsibilities. Both documents are available from the College website www.college-optometrists.org

Medicines Act Exemptions

Under the Human Medicines Regulations 2012, medicines which are classified as pharmacy (P) medicines may be sold or supplied only through registered pharmacies by or under the supervision of a pharmacist (regulation 220). Prescription Only Medicines (POM) are subject to an additional requirement: they may only be sold or supplied through pharmacies in accordance with a prescription given by an appropriate practitioner (regulation 214). General Sale List (GSL) medicines may be sold more widely through other retail outlets (regulation 221).

Exemptions from the general rules are permitted for optometrists:

Registered optometrists

Provided it is in the course of their professional practice, registered optometrists may sell or supply the following medicinal products to a patient:
all medicinal products on a General Sale List (GSL) (Note: Under medicines legislation products which are for use as eye drops or eye ointments are excluded from the GSL category)
all P medicines .
Provided it is in the course of their professional practice and in an emergency, registered optometrists may sell or supply POMs which are not for parenteral administration and which:

are eye drops and contain not more than 0.5 per cent chloramphenicol or

are eye ointments and contain not more than 1 per cent chloramphenicol

contain the following substances

Cyclopentolate hydrochloride

Fusidic Acid

Tropicamide

The POMs to which this exemption applies may also be sold or supplied by a person lawfully conducting a retail pharmacy business on the presentation of an order signed by a registered ophthalmic optician.

Additional supply optometrists

In addition to being able to access the medicines listed above, those optometrists who have undergone additional training and are accredited by the General Optical Council ('additional supply optometrists') will be able to sell, supply or write an order for an extended range of medicines.

Provided it is in the course of their professional practice and in an emergency, additional supply optometrists can sell or supply prescription only medicines containing the following substances:

- Acetylcysteine
- Atropine sulfate
- Azelastine hydrochloride
- Dicofenac sodium
- Emedastine
- Homotropine hydrobromide
- Ketotifen
- Levocabastine (no longer commercially available in the UK)
- Lodoxamide
- Nedocromil sodium
- Olopatadine
- Pilocarpine hydrochloride
- Pilocarpine nitrate
- Polymyxin B/bacitracin (no longer commercially available in the UK)
- Polymyxin B/trimethoprim (no longer commercially available in the UK)
- Sodium cromoglicate

The POMs to which this exemption applies may also be sold or supplied by a person lawfully conducting a retail pharmacy business on the presentation of an order signed by an additional supply optometrist.

An order made under the Opticians Act 1989 provides that where it appears to a registered optometrist that a person consulting him/her is suffering from an injury or disease of the eye, the optometrist shall refer that person to a registered medical practitioner, except in specified circumstances including an emergency or where otherwise it is impractical or inexpedient to do so or there is no justification for such a referral.

There is no legal definition of what is 'an emergency' for the purposes of the Medicines Act exemptions or the specific criteria governing referral under the Opticians Act. It is therefore for the optometrist to make a professional judgement as to whether there is in fact an emergency and what measures need to be taken in the best interests of the patient, bearing in mind the Opticians Act, the GOC rules and medicines legislation.

Wholesale supplies to registered optometrists

All POMs and P medicines to which Medicines Act exemptions apply may be sold to a registered optometrist by way of wholesale dealing.
Also, a registered optometrist may obtain the following medicinal products by way of wholesale dealing:
P medicines for administration in the course of his business
POM medicines for administration (as opposed to sale or supply) containing the following substances:
Amethocaine hydrochloride
Lignocaine hydrochloride
Oxybuprocaine hydrochloride
Proxymetacaine hydrochloride
An additional supply optometrist will also be able to obtain thymoxamine hydrochloride* via wholesale dealing should a commercial preparation become available.

For the purposes of paragraphs three and seven above, eye drops and eye ointments containing the following substances are classed as P medicines:

- Antazoline (up to 1%)
- Azelastine hydrochloride (up to 0.1% for the treatment of the signs and symptoms of allergic conjunctivitis
- Dibromopropamidine isethionate
- Fluorescein sodium
- Levocabastine (up to 0.05% for the symptomatic treatment of seasonal allergic conjunctivitis)*
- Lodoxamide (up to 0.1% for ocular signs and symptoms of allergic conjunctivitis
- Phenylephrine hydrochloride
- Propamidine isethionate
- Rose Bengal
- Sodium cromoglicate (Only for the treatment of acute seasonal allergic conjunctivitis or perennial allergic conjunctivitis and subject to a maximum strength of 2% for eye drops or 4% for eye ointment. Products containing this substance are also subject to restrictions on maximum quantity which may be sold or supplied as a P medicine. These are not more than 10ml for eye drops and 5g for eye ointment.)
- Various tear supplements and ocular lubricants
- Xylometazoline hydrochloride

*no longer commercially available in the UK.

It should be noted that this list only contains substances most commonly used by optometrists

Patient Group Directions

Patient Group Directions (PGDs) provide a legal framework that allows optometrists and other registered health professionals to supply and/or administer a specified medicine(s) to a pre defined group of patients, without them having to see a registered prescriber. However, supplying and/or administering medicines under PGDs should be reserved for situations in which this offers an advantage for patient care, without compromising patient safety.

Legislation establishing PGDs was introduced in 2000 and the current legislation for PGDs is included in The Human Medicines Regulations 2012. Guidance on the use of PGDs has been developed by NICE.
http://www.nice.org.uk/mpc/goodpracticeguidance/GPG2.jsp?domedia=1&mid=30199FE8-BE3E-2637-C7ABAC559ECCED96

Supplementary and Independent prescribing

Supplementary Prescribing

Supplementary prescribing is defined as 'a voluntary partnership between an independent prescriber (a doctor or dentist) and a supplementary prescriber to implement an agreed patient-specific clinical management plan with the patient's agreement'. The plan sets out how much responsibility should be delegated and refers to a named patient and to their specific condition. Agreement to the plan must be recorded by both the independent and supplementary prescriber before supplementary prescribing begins. Both prescribers must also share access to a common patient record.

Supplementary prescribing for optometrists was introduced July 2005. Accreditation for specialist registration as a supplementary prescriber involves a course of further training approved by the GOC followed by the College of Optometrists CFA for Specialist Qualifications in Therapeutics (Supplementary Prescribing). From 2009, supplementary prescribing has now been integrated into the CFA for independent prescribing.

Although there are no legal restrictions on the clinical conditions that supplementary prescribers can treat nor the medicines that they can prescribe, since this type of prescribing requires a prescribing partnership with an independent prescriber and an agreed clinical

management plan before it can begin, it is most useful when dealing with long-term medical conditions, such as glaucoma.

Independent Prescribing

Statutory legislation to enable independent prescribing by optometrists was introduced in June 2008. The proposed amendments were subject to public consultation and advice to Ministers by the Commission on Human Medicines (CHM). The CHM's recommendation was that suitably qualified optometrists should be able to prescribe any licensed medicine (except for controlled drugs or medicines for parenteral (injected) administration) for conditions affecting the eye, and the tissues surrounding the eye, within their recognised area of expertise and competence. Independent prescribers will be able to prescribe privately and where suitable arrangements have been made, write an NHS prescription. Accreditation for independent prescribing involves a course of further training approved by the GOC followed by the College of Optometrists CFA for Specialist Qualifications in Therapeutics (Independent Prescribing). Independent prescriber specialist registrants will also be accredited as supplementary prescribers and to supply drugs as additional supply optometrists.

The scope of optometrist independent prescribing is defined by the College of Optometrists Clinical Management Guidelines (CMGs), which provide a reliable source of evidence-based information on the diagnosis and management of a number of eye conditions that present with varying frequency in primary and first-contact care. Whilst they are intended specifically for specialist therapeutic prescribers, it is anticipated that all optometrists will find them a useful source of information. The CMGs are available from the College website **www.college-optometrists.org**

Pregnancy Risk Categories

The FDA has a categorization of drug risks to the foetus that runs from:
"Category A" (safest) to "Category X" (known danger--do not use!)

Category A

Controlled studies in women fail to demonstrate a risk to the foetus in the first trimester (and there is no evidence of a risk in later trimesters), and the possibility of foetal harm appears remote.

Category B

Either animal-reproduction studies have not demonstrated a foetal risk but there are no controlled studies in pregnant women, or animal-reproduction studies have shown an adverse effect (other than a decrease in fertility) that was not confirmed in controlled studies in women in the first trimester (and there is no evidence of a risk in later trimesters).

Category C

Either studies in animals have revealed adverse effects on the foetus (teratogenic or embryocidal or other) and there are no controlled studies in women, or studies in women and animals are not available. Drugs should be given only if the potential benefit justifies the potential risk to the foetus.

Category D

There is positive evidence of human foetal risk, but the benefits from use in pregnant women may be acceptable despite the risk (e.g., if the drug is needed in a life-threatening situation or for a serious disease for which safer drugs cannot be used or are ineffective).

Category X

Studies in animals or human beings have demonstrated foetal abnormalities, or there is evidence of foetal risk based on human experience or both, and the risk of the use of the drug in pregnant women clearly outweighs any possible benefit. The drug is contraindicated in women who are or may become pregnant.

Acetazolamide

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

Available Preparations

Acetazolamide: tablets, 250mg acetazolamide (Non-proprietary)

Diamox: tablets, 250mg acetazolamide (Mercury)

Diamox SR: tablets (modified release), 250mg acetazolamide (Mercury)

Drug Type

Anti-glaucoma.

Classification

Carbonic anhydrase inhibitor.

Indications

Emergency treatment of acute angle closure prior to surgery. See Clinical Management Guideline on angle closure glaucoma.

Contraindications

Hypersensitivity to acetazolamide or component of the preparation. Contraindicated in marked renal or hepatic disease. Acetazolamide should not be used in patients hypersensitive to sulphonamides.

Cautions

None for emergency treatment.

Pregnancy and Lactation

Pregnancy risk category B: Animal studies have reported embryotoxicity and teratogenicity in high doses and since there are no adequate and well-controlled studies in pregnant women, acetazolamide should be used in pregnancy only if the potential benefit to the mother clearly outweighs any possible risk to the developing foetus. Although acetazolamide has been reported to be excreted in human breast milk it is unlikely to lead to harmful effects following emergency use.

Interactions

None relevant to the emergency use of acetazolamide.

Ocular Side Effects

Transient myopia

Ocular Side Effects-Notes

Ocular side effects are unlikely in emergency use.

General Side Effects

Gastrointestinal disturbances e.g. nausea, vomiting and diarrhoea

Tingling feeling in the extremities

Polyuria

Thirst

Headache

Flushing

Dizziness

General Side effects-Notes

General side effects are unlikely in emergency use. However, patient should be accompanied to the hospital by a relative or carer (see CMG).

Dose

Adults: 250mg single (stat) dose (followed by emergency referral to an ophthalmologist).

Storage

Store below 30ºC.

Acetylcysteine

Legal Classification

POM: For use and supply by additional supply optometrists. May be used and prescribed by independent prescribing optometrists.

Available Preparations

Ilube: eye drops, 5% acetylcysteine, 0.35% hypromellose (Moorfields)

Drug Type

Artificial tears/ Ocular lubricant.

Classification

Artificial tears and mucolytic.

Indications

Relief of dry eye syndromes associated with deficient tear secretion and impaired or abnormal mucus production.
See Clinical Management Guideline on Tear Deficiency.

Contraindications

Hypersensitivity to acetylcysteine or any component of the preparation.

Cautions

Contact lenses should not be worn during treatment. Contains benzalkonium chloride which may accumulate in soft contact lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category B. Animal studies, using an oral dose many times greater than that used topically, found no teratogenetic effects. However, there are no adequate and well-controlled studies of acetylcysteine in pregnant or lactating women and therefore acetylcysteine should be used with caution in pregnancy and lactation.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging on instillation

General Side Effects

None

Dose

Adults & children (1 month and over). Instill 1 or 2 drops into the affected eye three or four times daily.

Storage

Store below 25ºC.

Aciclovir

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

Available Preparations

Zovirax: eye ointment, 3% aciclovir (GSK)

Drug type

Anti-infective.

Classification

Anti-viral.

Indications/Use

Aciclovir is indicated for the treatment of herpes simplex keratitis. See Clinical Management Guideline on Herpes Simplex Keratitis.

Contraindications

Hypersensitivity to aciclovir or any component of the preparation.

Cautions

Patients should avoid wearing contact lenses during treatment with aciclovir eye ointment.

Pregnancy and Lactation

Pregnancy risk category B. A post-marketing aciclovir registry has documented pregnancy outcomes in women exposed to any formulation of aciclovir. No unique or consistent pattern of birth defects has been reported. However, the use of aciclovir during pregnancy

requires that the benefits be weighed against the potential risks to the foetus. Following systemic administration, aciclovir has been detected in the milk of nursing mothers. However, the dosage received following the use of aciclovir eye ointment is likely to be insignificant.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Superficial punctate keratopathy
Transient mild stinging on instillation
Blepharitis

Ocular Side-effects-Notes

SPK is very commonly reported. Mild transient stinging on instillation is common, whereas blepharitis is a rare side effect.

General Side-effects

Hypersensitivity reactions

General Side-effects-Notes

Very rarely, hypersensitivity reactions including angioedema have been reported.

Dose

For adults & children (all ages): 1cm ribbon of ointment should be place in the lower conjunctival sac 5 times a day at approximately 4 hourly intervals (omitting overnight application). Treatment should be continued for at least 3 days after healing is complete.

Storage

Store below 30ºC.

Acrivastine

Legal Classification

P/GSL: For use and supply by all optometrists.

Available Preparations

Acrivastine: capsules, 8mg acrivastine (non-proprietary)

Benadryl Allergy Relief: capsules, 8mg acrivastine (Mc Neil Healthcare Products Ltd)

Benadryl Plus Capsules: 8mg acrivastine, 60mg pseudoephedrine (Mc Neil Healthcare Products Ltd)

Drug Type

Anti-histamine.

Classification

Non-sedative antihistamine.

Indications

For the symptomatic relief of allergic rhinitis (hay fever) and its associated ocular symptoms, perennial rhinitis and chronic idiopathic urticaria. See Clinical Management Guideline on Conjunctivitis (Seasonal and Perennial).

Contraindications

Hypersensitivity to acrivastine or any component of the preparation.

Should not be used in children <12 years and adults >65 years.

Cautions

Second generation antihistamines are less lipophilic and do not penetrate the blood-brain barrier to any significant extent. They are therefore less likely to cause centrally mediated effects e.g. drowsiness. However, small numbers of patients experience such effects and therefore they need to be warned that acrivastine may affect driving and other skilled tasks. Acrivastine has a greater propensity to induce drowsiness than either cetirizine or loratidine. Use with caution in patients with renal or hepatic impairment.
Products containing pseudoephedrine are contraindicated in patients with hypertension, heart disease, diabetes and in patients predisposed to angle-closure.

Pregnancy and Lactation

Pregnancy risk category B: Animal studies, using oral doses many times higher than the recommended human dose, found no teratogenic effects. However, there are no adequate and well-controlled studies in pregnant women. Because animal studies are not always predictive of human responses, acrivastine should be used in pregnancy only if the potential benefit to the mother clearly outweighs any possible risk to the developing foetus. It is not known if acrivastine is excreted in human breast milk and is therefore not recommended in nursing mothers.

Interactions

Avoid excessive alcohol consumption.
The concomitant use of pseudoephedrine-containing products and monoamine oxidase inhibitors (MAOI) may cause a rise in blood pressure.

Ocular Side Effects

Dry eyes

Punctate keratitis

Ocular Side Effects-Notes

Ocular side effects are rare.

General Side Effects

Drowsiness

Skin rash

Urinary retention

General Side effects-Notes

General side effects are rare. Rashes and urinary retention have been associated with the use of pseudoephedrine.

Dose

Adults & children (12 years and over). One 8mg capsule up to three times a day.

Not recommended in elderly patients (>65 years).

Storage

Store below 30ºC.

Antazoline Sulfate

Legal Classification

P: For use and supply by all optometrists.

Available Preparations

Otrivine-Antistin: eye drops, 0.5% antazoline sulfate, 0.05% xylometazoline hydrochloride (Spectrum Thea)

Drug Type

Anti-inflammatory.

Classification

Anti-histamine.

Indications

For the temporary relief of redness and itching of the eye due to seasonal and perennial allergies such as hay fever or house dust allergy.
See Clinical Management Guideline on Conjunctivitis- seasonal and perennial allergic.

Contraindications

Hypersensitivity to antazoline, xylometazoline or any component of the preparation. Should not be used in patients taking monoamine oxidase inhibitors (MAOI) within the last 14 days.

Cautions

The only preparation available in the UK contains xylometazoline, which is a sympathomimetic and should be avoided in patients at risk of angle closure. Use with caution in elderly patients with severe cardiovascular disease, including arrhythmia, poorly

controlled hypertension, or diabetes. Similarly, sympathomimetics should also be used with caution in the presence of hypertension, cardiac irregularities, hyperthyroidism diabetes mellitus or phaeochromocytomas, also in patients with conditions causing urinary retention such as prostatic hypertrophy or patients who are currently receiving other sympathomimetic drugs.

Contact lens wear should not be worn during treatment. Preparation contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Safety in pregnancy has not been established. Should be used with caution during pregnancy and only if the expected benefit to the mother is greater than any possible risk to the developing foetus.

It is not known whether antazoline is excreted in breast milk. Its use in nursing mothers therefore requires that the benefits be weighed against the potential risks to the infant.

Interactions

Should not be used in patients receiving monoamine oxidase inhibitors (MAOI) within 14 days of stopping such treatment (risk of hypertensive crisis). Should be used with caution in patients receiving other medications such as digitalis, beta-adrenergic blockers, guanetidine, reserpine, methyldopa or anti-hypertensive agents.

Sedating anti-histamines can enhance the sedating effects of CNS depressants including alcohol, hypnotics, opioid analgesics, anxiolytic sedatives, and anti-psychotics. They also have an additive anti-muscarinic action with other anti-muscarinic drugs, such as atropine, and some antidepressants

In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging

Blurring

Conjunctival hyperaemia

Conjunctival follicles

Local allergic reaction (rash, oedema, pruritus)

Mydriasis (leading to drug-induced angle closure)

Ocular Side Effects- Notes

Check angle status with van Herick since sympathomimetic effects of xylometazoline can lead to drug-induced angle closure.
Rebound hyperaemia may occur. Ocular side effects are uncommon and typically transient. Xylometazoline is a sympathomimetic and may precipitate angle closure in susceptible individuals. Recent case reports of severe follicular conjunctivitis.

General Side Effects

Headaches

Dizziness

Drowsiness

Dose

Adults & children (12 years and over) apply 1 drop two to three times daily.

Storage

Store below 25ºC.

Aspirin

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

P/GSL: For use and supply by all optometrists.

Available Preparations

POM:

Aspirin: tablets, 300mg aspirin (Non-proprietary)

Caprin: tablets, 300mg aspirin (Pinewood)

Nu-seals Aspirin: tablets, 300mg aspirin (Alliance)

P and GSL (up to 16 tablets, GSL, up to 32 tablets, P, >32 Tablets classed as POM):

Aspirin: tablets, 300mg aspirin (Non-proprietary)

Anadin Original: tablets, 325mg aspirin, 15mg caffeine (Wyeth Consumer Healthcare)

Aspro Clear: tablets, 300mg aspirin (Bayer Consumer Care)

Aspro Clear Maximum Strength: soluble tablets, 500mg aspirin (Bayer Consumer Care)

Disprin: tablets, 300mg aspirin (Reckitt Benckiser Healthcare)

Combination products:

P and GSL:

Anadin Extra: tablets, 300mg aspirin, 200mg paracetamol (Wyeth Consumer Healthcare)

Codis 500 Soluble Tablets: 500mg aspirin, 8mg codeine phosphate (Reckitt Benckiser Healthcare)

Disprin Extra: tablets, 300mg aspirin, 200mg paracetamol (Reckitt Benckister Healthcare)

Drug Type

Non-opioid analgesics.

Classification

Non-steroidal anti-inflammatory analgesic.

Indications

Mild to moderate pain from a variety of causes.

Contraindications

Aspirin should be avoided in patients with gastric ulcers or a history of gastric problems and in patients with a history of bleeding disorders or on anti-coagulant therapy must avoid OTC aspirin products. Due to risk of Reyes Syndrome aspirin is no longer licensed in children under the age of 16.

Cautions

The elderly are at increased risk of NSAID-induced adverse reactions. Particular caution is required in patients with renal, cardiac or hepatic impairment. The dose should be as low as possible. Use with caution in patients with asthma.

Pregnancy and Lactation

Pregnancy risk category D. There have been reports of NSAID toxicity during the early stages of pregnancy in animal studies. Most manufacturers therefore recommend that aspirin should not be used during pregnancy. Aspirin passes into breast milk in very low levels and due to the risk of Reyes Syndrome it should be avoided in nursing mothers.

Interactions

Should not be used with other NSAIDs. Aspirin potentiates the anti-coagulant effect of warfarin and may enhance the effects of oral hypoglycaemics of the sulphonylurea type and also enhance the toxicity of methotrexate.
Alcohol and corticosteroids may enhance the effects of aspirin on the gastrointestinal tract

Ocular Side Effects

Transient blurring
Refractive changes

Dry eyes

Colour vision disturbances

Ocular Side Effects-Notes

Ocular side effects are rare and have generally been described in patients taking high doses. There have been rare reports of transient myopia.

General Side Effects

Abdominal pain, nausea and dyspepsia

Peptic ulcer and gastro-intestinal haemorrhage.

Hypersensitivity reactions (see below)

General Side effects-Notes

Dyspepsia is relatively common, other side effects are rare. May precipitate bronchospasm and induce attacks of asthma or hypersensitivity (urticaria, rhinitis, angioneurotic oedema) in susceptible subjects.

Dose

Adults & children (16 years and over): 300-900mg every 4-6 hours, with or after food. Maximum daily dose 3600mg.

Storage

Store below 25ºC.

Atropine Sulfate

Legal Classification

POM: For use and supply by additional supply optometrists. May be used and prescribed by independent prescribing optometrists.

Available Preparations

Atropine Sulfate: eye drops, 0.5% atropine sulfate (non-proprietary)

Atropine Sulfate: eye drops, 1% atropine sulfate (non-proprietary)

Single Use (Preservative-free):

Minims Atropine Sulfate: eye drops, 1% atropine sulfate (Bausch & Lomb)

Drug Type

Mydriatic and cycloplegic.

Classification

Antimuscarinic.

Indications

As a topical cycloplegic. Also used for dilating the pupil in anterior uveitis, the alleviation of ciliary spasm following corneal abrasion and for penalisation therapy in amblyopia. See Clinical Management Guidelines on Corneal Abrasion and Anterior Uveitis.

Contraindications

Hypersensitivity to atropine or any component of the preparation.

Contraindicated in patients with confirmed or suspected angle-closure as an acute attack may be precipitated.

Cautions

Risk of systemic effects in infants < 3 months (eye ointment preferred as it reduces systemic absorption). Use with caution in patients at higher risk of systemic effects e.g. debilitated or elderly patients or patients with Downs Syndrome. Children with brain damage may also demonstrate a hyper-reactive response to atropine. Systemic absorption may be reduced by compressing the lacrimal sac at the medial canthus during, and for 2-3 minutes after instillation of the drops.
Multidose aqueous formulations contain benzalkonium chloride as a preservative and should not be used when soft contact lenses are worn.

Pregnancy and Lactation

Pregnancy risk category C. Safety of atropine for use in pregnancy has not been established. Atropine passes into breast milk in small amounts and may cause anti-cholinergic effects in babies of nursing mothers. Atropine should therefore be used in pregnancy and lactation only where benefits to the mother outweigh the potential risks to the developing foetus or baby.

Interactions

The effect of antimuscarinic agents may be enhanced by the concomitant administration of other drugs with antimuscarinic properties such as amantadine, some anti-histamines, butyrophenones, phenothiazines and tricyclic anti-depressants. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging
Transient blurring
Photophobia
Conjunctival hyperaemia
Conjunctival oedema
Raised intra-ocular pressure

Ocular Side Effects-Notes

Hypersensitivity reactions may rarely occur, characterised by an allergic lid reaction, hyperaemia and follicular conjunctivitis.

General Side Effects

Dry mouth

Dry skin

Flushing

Increased body temperature

Tachycardia

CNS effects

General Side effects-Notes

Anticholinergic effects e.g. dry mouth, flushing etc. are more likely to occur in infants and children. Contact dermatitis is not uncommon with atropine. CNS effects can occur, including: ataxia, hallucinations and drowsiness.

Dose

Not recommended in children <3 months.

Adults & children (3 months and over):
For cycloplegic refraction: eye drops, use 1 drop (1%) twice per day for 1-3 days before refraction. For ointment, use a thin strip 3 times a day for 1-3 days before refraction (do not use on the day of the refraction).

For uveitis: use 1 drop (1%) once or twice per day.

Storage

Store below 25ºC. Protect from light.

Azelastine Hydrochloride

Legal Classification

POM: For use and supply by additional supply optometrists. May be used and prescribed by independent prescribing optometrists.

Available Preparations

Optilast: eye drops: 0.05% azelastine hydrochloride (Meda)

Drug Type

Anti-inflammatory.

Classification

Anti-histamine.

Indications

Licensed for the treatment of seasonal allergic conjunctivitis in adults and children > 4 years, and the treatment of non-seasonal (perennial) allergic conjunctivitis in adults and children 12 years and over.
See Clinical Management Guideline on Conjunctivitis- seasonal and perennial allergic.

Contraindications

Hypersensitivity to azelastine or any component of the preparation.

Cautions

Contact lenses should not be worn during treatment. Contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Animal studies have shown that high oral doses of azelastine induce adverse effects on the foetus and since there are no well controlled studies in pregnant women, azelastine should not to used in pregnancy. Azelastine is excreted into breast milk in low quantities and is therefore not recommended during lactation.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow at least 10 minutes between applications of each preparation.

Ocular Side Effects

Transient irritation

Transient stinging

Transient burning

Transient blurring

Ocular Side Effects-Notes

In controlled multidose studies, approximately 30% of patients experienced transient burning/stinging. Transient blurring is reported by small numbers of patients.

General Side Effects

Headache

Bitter taste

General Side effects-Notes

In controlled trials 15% of subjects reported headache and 10% reported a bitter taste following application.

Dose

Seasonal allergic conjunctivitis: adults & children (4 years and over), 1 drop applied twice daily or more frequently (up to four times daily) if required.

Perennial allergic conjunctivitis: adults & children (12 years and over), 1 drop applied twice daily or more frequently (up to four times daily) if required.
Maximum duration of treatment is 6 weeks.

Storage

Store below 25°C.

Carbomers

Legal Classification

P/CE: For use and supply by all optometrists.

Available Preparations

Artelac Nighttime Gel: 0.2% carbomer (Bausch & Lomb)

Clinitas Gel: 0.2% carbomer 980 (Altacor)

GelTears: gel, 0.2% carbomer 980 (Bausch & Lomb)

Liposic: gel, 0.2% carbomer 980 (Bausch & Lomb)

Liquivisc: gel, 0.25% carbomer 974P (Spectrum Thea)

Lumecare Long Lasting Tear Gel: 0.2% carbomer 980 (Medicom)

Viscotears: liquid gel, 0.2% carbomer 980 (Alcon)

Single Use (Preservative-free):

Viscotears: liquid gel, 0.2% carbomer 980 (Alcon)

Drug Type

Artificial tears/ Ocular lubricants.

Classification

Artificial tears.

Indications

Carbomers are synthetic high molecular weight polymers of acrylic acid used for the treatment of dry eye or an unstable tear film. See Clinical Management Guideline on Tear Deficiency.

Contraindications

Hypersensitivity to carbomers or any component of the preparation.

Cautions

Multidose preparations contain preservatives (benzalkonium chloride or cetrimide) which may accumulate in soft contact lenses and cause irritation. Consider single use (unpreserved) preparations for soft lens wearers.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies of carbomers in pregnant woman or lactation. Although the risk is low they cannot be recommended in pregnancy or lactation.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

General Side Effects

None

Dose

Adults & children (1 month and over). Apply 1or 2 drops three to four times per day or as required. If > 6 drops per day consider a non-preserved tear supplement.

Storage

Store below 25ºC.

Carmellose Sodium

Legal Classification

P/CE: For use and supply by all optometrists.

Available Preparations

Single Use (Preservative-free)

Carmellose: eye drops, 0.5% carmellose sodium (non-proprietary)

Carmize: eye drops, 0.5% carmellose sodium (Aspire)

Celluvisc: eye drops, 0.5% carmellose sodium (Allergan)

Celluvisc: eye drops, 1% carmellose sodium (Allergan)

Optive: eye drops, 0.5% carmellose sodium in glycerol (Allergen)

Drug Type

Artificial tears/ Ocular lubricants.

Classification

Artificial tears.

Indications

Tear substitute for the treatment of dry eye. See Clinical Management Guideline on Tear Deficiency.

Contraindications

Hypersensitivity to carmellose sodium or any component of the preparation.

Cautions

None.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies of carmellose sodium in pregnancy or lactation. However, due to the negligible systemic exposure and the lack of pharmacological activity carmellose can be used during pregnancy and in nursing mothers.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

Eye pain

Lacrimation increased

Ocular hyperaemia

General Side Effects

None

Dose

Adults & children (1 month and over). Apply 1 or 2 drops 3-4 times per day or as required.

Storage

Store below 25ºC.

Cetirizine Hydrochloride

Legal Classification

P/GSL: For use and supply by all optometrists.

Available Preparations

P and GSL (GSL, maximum pack size, 14 tablets):

Cetirizine hydrochloride: tablets, 10mg cetirizine hydrochloride (non-proprietary)

Benadryl Allergy Relief Liquid Release Capsules: 10mg cetirizine hydrochloride (Mc Neil Healthcare Products Ltd)

Benadryl One A Day Relief: tablets, 10mg cetirizine hydrochloride (Mc Neil Healthcare Products Ltd)

Piriteze Allergy Tablets: 10mg cetirizine hydrochloride (GSK Consumer Healthcare)

Zirtek Allergy Relief: tablets,10mg cetirizine hydrochloride (UCB Pharma Ltd)

Preparations for children:

P and GSL:

Cetirizine hydrochloride: oral solution, 1mg/ml cetirizine hydrochloride (non-proprietary)

Benadryl Allergy Children's: oral solution,1mg/ml cetirizine hydrochloride (Mc Neil Products Ltd)

Piriteze Allergy Syrup: oral solution, 1mg/ml cetirizine hydrochloride (GSK Consumer Healthcare)

Zirtek Allergy Relief for Children: oral solution,1mg/ml cetirizine hydrochloride (UCB Pharma Ltd)

Drug Type

Anti-histamine.

Classification

Non-sedative antihistamine.

Indications

For the control of the symptoms of seasonal allergic rhinitis (hay fever) including ocular symptoms, perennial allergic rhinitis and other allergies e.g. insect bites, allergic skin reactions.
See Clinical Management Guideline on Conjunctivitis (Seasonal and Perennial).

Contraindications

Hypersensitivity to cetirizine or any component of the preparation.

Cautions

Second generation antihistamines are less lipophilic and do not penetrate the blood-brain barrier to any significant extent. They are therefore less likely to cause centrally mediated effects e.g. drowsiness. However, approx. 6% of patients experience such effects and therefore patients need to be warned that cetirizine may affect driving and other skilled tasks.
Use with caution in patients with renal or hepatic impairment.
Caution in epileptic patients and patients at risk of convulsions is also recommended.

Pregnancy and Lactation

Pregnancy Category B: In animal studies, cetirizine was not teratogenic in doses many times higher than the maximum recommended human dose. However, there are no adequate and well-controlled studies in pregnant women and because animal studies are not always predictive of human response, cetirizine should be used in pregnancy only if clearly needed. Cetirizine has been reported to be excreted in human breast milk and therefore its use in nursing mothers is not recommended.

Interactions

Avoid excessive alcohol consumption. Anticholinergic effects of cetirizine (e.g. dry mouth, blurred vision) may be enhanced by drugs with anticholinergic effects such as antipsychotics or tricyclic antidepressants.

Ocular Side Effects

Blurred vision

Accommodation disorders

Dry eyes

Oculogyric crisis

Ocular Side Effects-Notes

Ocular side effects are very rare.

General Side Effects

Drowsiness

Fatigue

Headache

Dizziness

Agitation

Dry mouth

Gastointestinal discomfort

General Side effects-Notes

General side effects are rare and are more likely to occur in children

Dose

Adults & children (over 12 years): one 10mg tablet daily.

Child 2 to 6 years: 2.5mg twice daily (2.5ml oral solution twice daily)

Child 6 to 12 years: 5mg twice daily (5ml oral solution twice daily)

Storage

Store below 30ºC.

Chloramphenicol

Legal Classification

POM: For use and supply by all optometrists. May be used and prescribed by independent prescribing optometrists.

P: For use and supply by all optometrists.

Available Preparations

POM:

Chloramphenicol: eye drops, 0.5% chloramphenicol (non-Proprietary)

Chloramphenicol: eye ointment, 1.0% chloramphenicol (non-Proprietary)

Chloromycetin Redidrops: eye drops, 0.5% chloramphenicol (Mercury)

Chloromycetin Ophthalmic Ointment: 1.0% chloramphenicol (Mercury)

Single Use (Preservative-free):

Minims Chloramphenicol: eye drops, 0.5% chloramphenicol (Bausch & Lomb)

Over the counter (P)*:

Boots Pharmacy Antibiotic Eye Drops: 0.5% chloramphenicol (Boots Company PLC)

Brochlor Eye Drops: 0.5% chloramphenicol (Sanofi-Aventis)

Brochlor Eye Ointment: 1.0% chloramphenicol (Sanofi-Aventis)

Golden Eye Antibiotic: eyedrops, 0.5% chloramphenicol (Typharm)

Golden Eye Antibiotic: eye ointment, 1% chloramphenicol (Typharm)

Galpharm Chloramphenicol 0.5% w/v Antibiotic Eye Drops: 0.5% chloramphenicol (Galpharm)

Galpharm Chloramphenicol 1% w/w Antibiotic Eye Ointment: 1% chloramphenicol (Galpharm)

Optrex Infected Eyes: eye drops, 0.5% chloramphenicol (Crookes Healthcare)

Optrex Infected Eyes: eye ointment, 1.0% chloramphenicol (Crookes Healthcare)

* licensed for acute bacterial conjunctivitis only

Drug type

Anti-infective.

Classification

Anti-bacterial.

Indications/Use

POM: First line topical treatment for superficial ocular infections and as a prophylactic agent following minor ocular trauma.

P: Licensed for acute bacterial conjunctivitis only.

See Clinical Management Guidelines on Hordeolum, Blepharitis, Conjunctivitis (Bacterial), Dacryocystitis (Chronic), Corneal Abrasion, Foreign Body (Sub-tarsal).

Contraindications

Hypersensitivity to chloramphenicol or any component of the preparation.
Previous history or family history of blood dyscrasias.

Cautions

Contact lenses should not be worn during treatment. Multidose aqueous formulations contain phenylmercuric nitrate as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. There are no well-controlled studies of chloramphenicol in pregnant women and thus its safety for use in pregnancy has not been established. Chloramphenicol is excreted in human breast milk and therefore should therefore not be used in nursing mothers. Neonatal exposure to topical chloramphenicol carries a theoretical risk of grey baby syndrome (chloramphenicol toxicity in newborns resulting from the lack of liver enzymes necessary to metabolize the drug).

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Dose

POM: Adults & children (1 month and over).
P: Adults & children (2 years and over). Maximum duration of treatment 5 days.

Eye drops: apply 1 drop into the infected eye every 2 hours for 48 hours. After this period, treatment should be every 4 hours during waking hours. Eye drops may be supplemented by ointment at night. The course of treatment should last 5 days (even if symptoms improve).
Eye ointment: put a small amount into the affected eye four times a day for 2 days, and then twice a day for 5 days.

Ocular Side Effects

Transient irritation
Transient stinging
Transient blurring

Ocular Side Effects-Notes

Ocular side effects are rare. Transient irritation or stinging may occur on instillation. Ophthalmic ointment may cause blurring on application. Hypersensitivity reactions may rarely occur.

General Side Effects

Aplastic anaemia.

General Side Effects-Notes

Myelosupression following the use of topical chloramphenicol is not yet proven and the possibility of idiosyncratic aplastic anaemia arising following treatment is extremely unlikely.

Storage

Store between 2 and 8ºC. Protect from light.

Chlorphenamine Maleate

Legal Classification

P: For use and supply by all optometrists.

Available Preparations

Chlorphenamine: tablets, 4mg chlorphenamine maleate (non-proprietary)

Piriton Allergy Tablets: 4mg chlorphenamine maleate (GSK Consumer Healthcare)

Preparations for children:

Chlorphenamine: oral solution, 2mg/5ml chlorphenamine maleate (non-proprietary)

Piriton Syrup: oral solution, 2mg/5ml chlorphenamine maleate (GSK Consumer Healthcare)

Drug Type

Anti-histamine.

Classification

Sedating antihistamine.

Indications

For the control of the symptoms of seasonal allergic rhinitis (hay fever) including ocular symptoms, perennial allergic rhinitis and other allergies e.g. insect bites, allergic skin reactions.

See Clinical Management Guideline on Conjunctivitis (Seasonal and Perennial).

Contraindications

Hypersensitivity to chlorphenamine or any component of the preparation.

Cautions

Drowsiness may affect performance in skilled tasks (e.g. driving). Children and the elderly are more likely to experience the neurological anticholinergic effects and paradoxical excitation (eg. increased energy, restlessness, nervousness). Sedating antihistamines have significant antimuscarinic activity and they should be used with caution in prostatic hypertrophy, urinary retention and pyloroduodenal obstruction. Caution may be required in epilepsy.

Pregnancy and Lactation

Pregnancy risk category B. There is inadequate evidence of the safety of chlorphenamine in human pregnancy. It should only be used when clearly needed and when the potential benefits outweigh the potential unknown risks to the foetus. It is reasonable to assume that chlorphenamine is secreted in breast milk and therefore use in nursing mothers requires that the therapeutic benefits outweight the potential hazards to the baby.

Interactions

Avoid excessive alcohol consumption. Anticholinergic effects of chlorphenamine (e.g. dry mouth, blurred vision) may be enhanced by drugs with anticholinergic effects such as antipsychotics, MAOI or tricyclic antidepressants. Chlorphenamine inhibits phenytoin metabolism and can lead to phenytoin toxicity.
Concurrent use of chlorphenamine and hypnotics or anxiolytics may cause an increase in sedative effects.

Ocular Side Effects

Blurred vision
Dry eyes
Mydriasis (leading to acute angle closure)

Ocular Side Effects-Notes

Check angle status with van Herick since anticholinergic effects can lead to drug-induced angle closure.
Ocular side effects are rare and reversible when treatment is ceased. Prolonged use can cause blurred vision, anisocoria and decreased accommodation.

General Side Effects

Drowsiness

Fatigue

Headache

Dizziness

Psychomotor impairment

Dry mouth

Gastointestinal disturbances

General Side effects-Notes

General side effects are rare and are more likely to occur in children and the elderly.

Dose

Adults & children (12 years and over): one 4mg tablet every 4-6 hours (max. dose 24mg in 24h).
The elderly are more likely to experience neurological anticholinergic effects. Consideration should be given to using a lower daily dose (e.g. a maximum of 12mg in any 24 hours).

Child preparations
Children aged 1 - 2 years: 2.5ml (1mg) twice daily. The minimum interval between the doses should be 4 hours. Maximum daily dose: 5ml (2mg) in any 24 hours.
Children aged 2 - 6 years: 2.5ml (1mg) every 4 to 6 hourly. Maximum daily dose: 15ml (6mg) in any 24 hours.
Children 6 to 11 years: 1 x 5ml or 1/2 tablet every 4-6 hours (max. 30ml daily)

Storage

Store below 30ºC.

Cyclopentolate Hydrochloride

Legal Classification

POM: For use and supply by all optometrists.

Available Preparations

Mydrilate: eye drops, 0.5% cyclopentolate hydrochloride (Intrapharm)

Mydrilate: eye drops, 1.0% cyclopentolate hydrochloride (Intrapharm)

Single Use (Preservative-free):

Minims Cyclopentolate: eye drops, 0.5% cyclopentolate hydrochloride (Bausch & Lomb)

Minims Cyclopentolate: eye drops, 1% cyclopentolate hydrochloride (Bausch & Lomb)

Drug Type

Mydriatic and cycloplegic.

Classification

Antimuscarinic.

Indications

Drug of choice for cycloplegic refraction. Also used for dilating the pupil in anterior uveitis, the alleviation of ciliary spasm following corneal abrasion and for penalisation therapy in amblyopia. See Clinical Management Guidelines on Corneal Abrasion and Anterior Uveitis.

Contraindications

Hypersensitivity to cyclopentolate or any component of the preparation.

Contraindicated in patients with confirmed or suspected angle-closure as an acute attack may be precipitated.

Cautions

Use with caution in very young children and other patients at particular risk, such as debilitated or aged patients. Darkly pigmented irises are more resistant to pupillary dilation and caution should be exercised to avoid overdosage. Systemic absorption may be reduced by compressing the lacrimal sac at the medial canthus during, and for 2-3 mins after instillation of the drops.
Multidose aqueous preparations contain benzalkonium chloride and should not be used when soft contact lenses are worn.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies of cyclopentolate in pregnant women. Cyclopentolate should not be used in pregnancy unless the benefit to the mother clearly outweighs the risk to the developing foetus. It is not known whether cyclopentolate is excreted in breast milk. It should therefore be used with caution in nursing mothers.

Interactions

The effect of anti-muscarinic agents may be enhanced by the concomitant administration of other drugs with anti-muscarinic properties such as amantadine, some anti-histamines, butyrophenones, phenothiazines and tricyclic anti-depressants.
In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging
Transient blurring
Photophobia
Raised intraocular pressure
Conjunctival hyperaemia
Conjunctival oedema

Ocular Side Effects-Notes

Hypersensitivity reactions may rarely occur. Sensitivity to light occurs secondary to pupillary dilation. Prolonged administration may lead to local irritation, hyperaemia, oedema and conjunctivitis.

General Side Effects

CNS disturbances

Dry mouth

Flushing

Tachycardia

Urinary symptoms

Gastro-intestinal symptoms

General Side effects-Notes

Systemic cyclopentolate toxicity is dose-related. It is uncommon following administration of the 1% solution and would not be expected to occur following instillation of 0.5% solution. Children are, however, more susceptible to such reactions than adults. Toxicity is usually transient and is manifest mainly by CNS disturbances (ataxia, incoherent speech, restlessness, hallucinations, hyperactivity, disorientation). Systemic anticholinergic toxicity is a rare consequence of systemic absorption.

Dose

Adults and children (12 years and over):

For cyclopegic refraction: 1 drop of 0.5% solution (which may be repeated after five minutes) is usually sufficient. Maximum effect is induced in 30-60 minutes after instillation.

For anterior & posterior uveitis and posterior synechiae breakdown: 1 - 2 drops (1%) are instilled every 6-8 hours.

For alleviation of ciliary spasm: 1 drop (1%) 2-3 times per day.

Children:

Not recommended in children under 3 months.

For cycloplegic refraction: 3 months - 12 years: 1 drop of a 1% solution to each eye.

Children should be observed for 45 minutes after instillation.

Storage

Store below 25ºC. Protect from light.

Mydrillate should be stored between 2 and 8ºC.

Diclofenac sodium

Legal Classification

POM: For use and supply by additional supply optometrists. May be used and prescribed by independent prescribing optometrists.

Available Preparations

Voltarol Ophtha Multidose: eye drops, 0.1% diclofenac sodium (Spectrum Thea)

Single use (preservative-free)
Voltarol Ophtha: eye drops, 0.1% dicclofenac sodium (Spectrum Thea)

Drug Type

Anti-inflammatory.

Classification

Non-steroidal anti-inflammatory.

Indications

Reduction of peri-operative miosis and postoperative inflammation. Control of pain following corneal epithelial defects. Seasonal allergic conjunctivitis. See Clinical Management Guidelines on Conjunctivitis (Seasonal and Perennial) and Corneal Abrasion.

Contraindications

Hypersensitivity to diclofenac sodium or any component of the preparation. Like other NSAIDs, diclofenac is also contraindicated in patients in whom attacks of asthma, urticaria or acute rhinitis are precipitated by acetylsalicylic acid or by other drugs with prostaglandin synthetase inhibiting activity.

Cautions

Use of topical NSAIDs may result in keratitis. In some susceptible patients continued use of topical NSAIDs may result in epithelial breakdown, corneal thinning, corneal infiltrates, corneal erosion, corneal ulceration, and corneal perforation. These events may be sight-threatening. Patients with evidence of corneal epithelial breakdown should immediately discontinue use of topical NSAIDs and corneal health should be closely monitored.
Caution should be exercised when topical NSAIDs are used concomitantly with topical steroids.
Contact lens wear should be discontinued during treatment. The multidose preparation contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category B. There are no data on the use of diclofenac eye drops in pregnancy. Studies in animals have shown reproductive toxicity with diclofenac. 1st and 2nd trimester: Animal studies to date have shown no risk to the foetus but no controlled studies in pregnant women are available. 3rd trimester: diclofenac eye drops should not be used due to a possible risk of premature closure of the ductus arteriosus and possible inhibitions of contractions.

Diclofenac is excreted in breast milk. However, at therapeutic doses of Voltarol Ophtha no effects on the suckling child are anticipated. Use of ocular diclofenac is not recommended during breast feeding unless the expected benefits outweigh the possible risks.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow at least 10 minutes between each application. Concomitant use of topical NSAIDs such as diclofenac and topical steroids in patients with significant pre-existing corneal inflammation may increase the risk of developing corneal complications.

Ocular Side Effects

Transient burning

Irritation

Punctate keratitis

Raised intraocular pressure

Dry eyes

Itching

Hyperaemia and blurring on instillation

Ocular Side Effects-Notes

A mild to moderate burning sensation is the most frequently reported adverse reaction (15%). In high risk patients (corticosteroid use/rheumatic disease) diclofenac has been associated, in rare cases, with corneal ulceration or thinning. Most patients were treated for a prolonged period of time. Raised IOP has also been noted (usually post-surgery).

General Side Effects

Abdominal discomfort

Asthenia

Dizziness

Headaches

Nausea

Dyspnoea

General Side Effects-Notes

The following systemic adverse reactions occur in 3% or less of the patients: abdominal pain, asthenia, chills, dizziness, facial oedema, fever, headache, insomnia, nausea, pain, rhinitis, viral infection, and vomiting.

In rare cases dyspnoea and exacerbation of asthma have been reported.

Dose

Not licensed for use in children.

Control of ocular pain associated with corneal epithelial defects after accidental non-penetrating trauma: apply 1 drop 4 times daily for up to 2 days.

The relief of the ocular signs and symptoms of seasonal allergic conjunctivitis: apply 1 drop 4 times daily for as long as required.

Storage

Store below 25°C (multidose), 2-8°C (unit dose). Do not freeze.

Doxycycline

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

Available Preparations

Doxycycline: capsules, 50mg doxycycline hyclate (non-proprietary)

Doxycycline: capsules, 100mg doxycycline hyclate (non-proprietary)

Vibramycin D: dispersible tablets, 100mg doxycycline monohydrate (Pfizer)

Modified release

Efracea: capsules, 40mg doxycycline monohydrate (Galderma)

Drug Type

Anti-infective.

Classification

Anti-bacterial.

Indications

Doxycycline has been found to be clinically effective in the treatment of a variety of infections caused by susceptible strains of Gram-positive and Gram-negative bacteria and certain other micro-organism. See Clinical Management Guidelines on Blepharitis and Ocular Rosacea.

Contraindications

Hypersensitivity to doxycycline or component of the preparation. Hypersensitivity to any other members of the tetracycline family. Doxycycline is contraindicated in children less than 12 years of age and in pregnant or nursing women.

Cautions

Use with caution in patients with hepatic impairment. May cause photosensitivity and patients should use skin protection, avoid prolonged exposure to sunlight and advised not use tanning equipment. A few cases of pregnancy have been attributed to the use of tetracycline antibiotics with oral contraceptives. Patients taking contraceptives containing oestrogen should be warned that there is a possibility of contraceptive failure and advised to use alternative forms of contraception during treatment. Use with caution in patients with SLE or myasthenia gravis as tetracyclines may exacerbate these conditions.

Pregnancy and Lactation

Pregnancy risk category D: contraindicated in pregnancy. Animal studies have shown that tetracyclines cross the placenta and can cause toxicity to the foetus. Yellow-brown discolouration of the teeth and enamel hypoplasia can occur when drugs of the tetracycline family are administered after the first trimester of pregnancy. Tetracyclines are excreted into breast milk and therefore contraindicated in nursing mothers.

Interactions

Antacids and preparations containing aluminium, calcium, magnesium, zinc, bismuth or iron may decrease the absorption of doxycycline. Tetracyclines decrease plasma prothrombin activity and a dose reduction in patients taking anticoagulants may be necessary. Tetracyclines may reduce the effect of oral contraceptives (see cautions). Tetracyclines may increase the plasma concentration of ciclosporin.

Ocular Side Effects

Blurred vision

Field loss

Diplopia

Discoloration of the conjunctiva and lacrimal secretions

Ocular Side Effects-Notes

Ocular side effects are rare. Visual disturbance (blurred vision, field loss, diplopia) has been reported in association with benign intracranial hypertension.

General Side Effects

Gastrointestinal disturbances e.g. nausea, vomiting and diarrhoea

Oesophagitis and oesophageal ulceration

Discolouration of teeth and enamel hypoplasia (young children)

Abnormal bone growth (young children)

Hypersensitivity reactions

Headache

Photosensitivity

Benign intracranial hypertension

General Side effects-Notes

Gastrointestinal disturbances are commonly reported. The presence of headache and visual disturbance may indicate benign intracranial hypertension (discontinue treatment).

Dose

For blepharitis and ocular rosacea: treatment may need to be continued for several weeks or months.

Adults: 2 x 50mg capsules once daily (or 1 x100mg daily).

Storage

Store below 25ºC.

Emedastine

Legal Classification

POM: For use and supply by additional supply optometrists. May be used and prescribed by independent prescribing optometrists.

Available Preparations

Emadine: eye drops, 0.05% emedastine (as difumarate) (Alcon)

Drug Type

Anti-inflammatory.

Classification

Anti-histamine.

Indications.

Treatment of seasonal allergic conjunctivitis.

See Clinical Management Guideline on Conjunctivitis- seasonal and perennial allergic.

Contraindications.

Hypersensitivity to emedastine or any component of the preparation.

Not recommended in patients >65 years. Contraindicated in patients with renal and hepatic impairment.

Cautions.

Contact lenses should not be worn during treatment. Preparation contains benzalkonium chloride as a preservative, which may accumulate in soft contact lenses and cause irritation.

Pregnancy and Lactation.

Pregnancy risk category B. Safety in pregnancy has not been established. Foetal toxicity has been reported in animals after oral doses many times higher than the ophthalmic dose. The manufacturer states that Emadine can be used in pregnancy as long as the ophthalmic dose is respected. Emedastine has also been detected in breast milk in animal studies and therefore this medicine should be avoided in nursing mothers.

Interactions.

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects.

Transient irritation

Dry eye

Eye pain

Foreign body sensation

Conjunctival hyperaemia

Corneal infiltrates

Ocular Side Effects-Notes.

In controlled trials, ocular side effects were reported in approx 7% of patients. Transient irritation on instillation is the most commonly reported side effect (incidence 2%). Less common effects include dry eye, foreign body sensation, conjunctival hyperaemia. Corneal infiltrates have been reported in conjunction with the use of emedastine, in which case discontinue use.

General Side Effects.

Headache

Rhinitis

General Side Effects-Notes.

Occasional systemic adverse events are reported, including: headache and rashes.

Dose.

Adults & children (3 years and over), 1 drop applied twice daily.

Storage.

Store below 25ºC.

Epinastine Hydrochloride

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

Available Preparations

Relestat: eye drops, 500µg per ml epinastine hydrochloride (Allergan)

Drug type

Anti-inflammatory.

Classification

Anti-histamine.

Indications/Use

Epinastine is indicated for the treatment of the symptoms of seasonal allergic conjunctivitis.

See Clinical Management Guideline on Conjunctivitis (Seasonal and Perennial).

Contraindications

Hypersensitivity to epinastine or any component of the preparation.

Cautions

Contact lenses should not be worn during treatment. Contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Data is limited on the safety of epinastine in pregnancy.

Therefore, the use of epinastine during pregnancy requires that the benefits be weighed

against the potential risks to the foetus. It is not known whether epinastine is excreted in human breast milk. Caution should be exercised when prescribing epinastine to breast-feeding women.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Mild burning sensation/ eye irritation

Dry eye

Itching

Eye pain

Increased lacrimation

Visual disturbance

Ocular Side-effects-Notes

Transient burning on instillation is common. Eye pain and increased lacrimation have been reported during post-marketing surveillance.

General Side-effects

Dry mouth

Taste disturbance

Nasal irritation

Headache

Itching

General Side effects-Notes

General side effects are uncommon (<1:100).

Dose

For adults & children (12 years and over): one drop should be instilled into each affected eye twice daily. Duration of treatment should not exceed 8 weeks.

Storage

Store below 25ºC.

Eye Nutrients

Legal Classification

Unlicensed: For use and supply by all optometrists.

Drug Type

Nutritional supplements.

Classification

Vitamins and minerals.

Preparations Available

Equavision: (Equazen)

Eye Essentials: (Vitamin Health)

ICaps: (Alcon)

Macusan: (Butterflies Healthcare)

Macusan Plus: (Butterflies Healthcare)

Macushield: (Macuvision Europe)

Nutrof Total (Spectrum Thea)

Ocuvite Lutein: (Bausch and Lomb)

Ocuvite Complete: (Bausch and Lomb)

PreserVision Original: (Bausch and Lomb)

PreserVision Lutein: (Bausch and Lomb)

Visionace: (Vitabiotics)

Visionace with Omega 3 : (Vitabiotics)

VisiVite Original Formula: (Vitamin Science)

Visivite Smokers Formula: (Vitamin Science)

Viteyes Advanced: (Vitamin Health)

Viteyes Advanced Beta-Carotene Free: (Vitamin Health)

Viteyes Omega 3: (Vitamin Health)

Viteyes Original: (Vitamin Health)

Viteyes Original Plus Lutein: (Vitamin Health)

Viteyes Plus Lutein Beta-Carotene Free: (Vitamin Health)

Indications

Maintenance of eye health. Management of patients with age-related macular degeneration (limited support for the use of certain nutritional supplements in the management of patients with AMD is provided by the Age-related Eye Disease Study (AREDS) http://www.nei.nih.gov/amd/summary.asp

And AREDS2

http://www.nei.nih.gov/areds2/

There is no evidence for a benefit of nutritional supplements in the primary prevention of AMD.

Contraindications

Products containing beta-carotene (as vitamin A) should not be used by past or current smokers (beta-carotene has been found to increase the risk of lung cancer in smokers).

Copper should be avoided in patients with biliary tract obstruction or Wilsons disease.

Cautions

The risks of high dose nutritional supplements are unknown.

Vitamin E has been associated with an increased risk of heart failure in people with vascular disease or diabetes.

High doses of vitamin A can increase the risk of osteoporosis in women.

Pregnancy and Lactation

It is not advisable to take high dose multivitamins and minerals in pregnancy or during lactation.

Interactions

The anticoagulant properties of warfarin can be altered by high doses of vitamin A, C and E. Zinc decreases the absorption of tetracyclines and fluoroquinolones. Concurrent use of isotretinoin may increase the risk of vitamin A toxicity.

Ocular Side Effects

None reported.

General Side Effects

Nausea

Gastrointestinal disturbance

Skin yellowing

General Side Effects-Notes

The Age-related Eye Disease Study (AREDS) addressed the issue of safety of the preparation used. Yellowing of the skin and self-reported anaemia were noted slightly more often in patients taking multivitamins (with or without zinc) compared to placebo. There is little available data on the long-term safety of these products,

Dose

Not recommended in children.

Dosing for individual products is given in the Table.

Storage

Store below 25ºC.

Fluorescein Sodium

Legal Classification

P: For use and supply by all optometrists.

Available Preparations

Minims Fluorescein: eye drops, 1% fluorescein sodium (Bausch & Lomb)

Minims Fluorescein: eye drops, 2% fluorescein sodium (Bausch & Lomb)

Drug Type

Ocular diagnostic preparation.

Classification

Diagnostic stain.

Indications

As a diagnostic stain for the detection of lesions and foreign bodies. Fluorescein is also used for Goldmann applanation tonometry and in the fitting of rigid contact lenses.

Contraindications

Hypersensitivity to fluorescein or any component of the preparation. Fluorescein is able to penetrate soft contact lenses and therefore should not be used when soft contact lenses are worn.

Cautions

Special care should be taken to avoid microbial contamination. *Pseudomonas aeruginosa* grows well in fluorescein solutions. Each *Minims* unit should be discarded after a single use.

Pregnancy and Lactation

Pregnancy risk category B. There are no adequate and well-controlled studies of fluorescein in pregnant woman. Animal studies have shown that fluorescein crosses the placental barrier. Fluorescein should therefore be used with caution during pregnancy, and only if the expected benefit to the mother is greater than any possible risk to the foetus. Although fluorescein is excreted in breast milk it is generally considered safe to use in nursing mothers.

Interactions

None known.

Ocular Side Effects

Transient blurring.

General Side Effects

None.

Dose

Adults & children (1 month and over). A single drop of 1 or 2% sodium fluorescein is usually sufficient for most indications.

Storage

Store below 25ºC.

Fluorometholone

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

Available Preparations

FML: eye drops, 0.1% fluorometholone, 1.4% PVA (*Liquifilm)* (Allergan)

Drug type

Anti-inflammatory.

Classification

Corticosteroid.

Indications/Use

Fluorometholone is indicated in the treatment of corticosteroid-responsive inflammation of the conjunctiva, cornea and anterior segment. See Clinical Management Guidelines on Pinguecula, Pterygium and Episcleritis.

Contraindications

Hypersensitivity to fluorometholone or any component of the preparation. Fluorometholone is contraindicated in viral diseases of the cornea and conjunctiva, fungal diseases of the eye or other infectious diseases where it may mask infection or enhance an existing infection.

Cautions

Fluorometholone, as with other corticosteroids, can cause ocular hypertension and should be used with caution in patients with glaucoma (see Clinical Management Guideline on Steroid Glaucoma).

Prolonged use of corticosteroids may suppress host immune responses and increase the possibility of secondary ocular infection.

In diseases causing thinning of the cornea or sclera, corticosteroids have been associated with perforations.

Contact lenses should not be worn during treatment. Contains benzalkonium chloride as a preservative, which may be accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Safety of fluorometholone during pregnancy has not been established. Therefore, the use of fluorometholone during pregnancy requires that the benefits be weighed against the potential risks to the foetus. It is not known if fluorometholone passes into human breast milk. Caution should be exercised when prescribing to breast-feeding women.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Raised intra-ocular pressure

Posterior sub-capsular cataract formation

Secondary ocular infection

Perforation of the globe

Ocular Side-effects-Notes

The likelihood of ocular hypertension is reduced compared to other corticosteroids e.g. prednisolone. Ocular signs and symptoms similar to the underlying ocular disease being treated were reported in clinical trials e.g. ocular discomfort, epiphora, foreign body sensation, hyperaemia and itching.

General Side-effects

Local side effects of steroid therapy e.g. skin atrophy, striae and telangiectasia may affect facial skin.

Dose

For adults & children (2 years and over): 1-2 drops should be instilled 2-4 times daily. During the initial 24-48 hours the dose can be increased to 2 drops every hour.

Storage

Store below 25ºC.

Flurbiprofen

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

Available Preparations

Flurbiprofen: tablets, 50mg flurbiprofen (non-proprietary)

Flurbiprofen: tablets, 100mg flurbiprofen (non-proprietary)

Froben: tablets, 50mg flurbiprofen (Abbott Healthcare)

Froben: tablets, 100mg flurbiprofen (Abbott Healthcare)

Drug Type

Anti-inflammatory.

Classification

Non-steroidal anti-inflammatory drug (NSAID).

Indications

Flurbiprofen is licensed for the treatment of inflammatory musculoskeletal and joint diseases. It is also licensed for the relief of mild to moderate pain. Flurbiprofen has been used off- licence for the treatment of inflammatory diseases of the anterior eye. See Clinical Management Guideline on Episcleritis.

Contraindications

Hypersensitivity to flurbiprofen or any component of the preparation. There is the potential of cross sensitization with aspirin or other NSAIDs and flurbiprofen is not indicated in individuals who have previously demonstrated sensitivity to these drugs. Flurbiprofen should not be used in patients with a history of gastrointestinal bleeding or perforation, patients

with ulcerative colitis or Crohn's disease or in patients with severe heart failure, hepatic failure or renal failure.

Cautions

The elderly are at increased risk of NSAID-induced adverse reactions. Particular caution is required in patients with renal, cardiac or hepatic impairment. The dose should be the lowest effective dose for the shortest duration. Caution is required if flurbiprofen is administered to patients suffering from or with a previous history of asthma or bleeding disorders.

Pregnancy and Lactation

Pregnancy risk category C. There have been reports of NSAID toxicity during the early stages of pregnancy in animal studies. In the third trimester, flurbiprofen can expose the foetus to cardiopulmonary toxicity and renal dysfunction. Most manufacturers therefore recommend that flurbiprofen should not be used during pregnancy, particularly during the third trimester. NSAIDs pass into breast milk in very low levels and should be avoided in nursing mothers.

Interactions

Should not be used with other NSAIDs. NSAIDs potentiate the anti-coagulant effect of warfarin. NSAIDs reduce the effects of diuretics and other anti-hypertensive drugs. NSAIDs can increase the risk of convulsions with quinolone antibiotics.

Ocular Side Effects

Non-specific visual disturbance.

Ocular Side Effects-Notes

Ocular side effects are rare and have generally been described in patients taking high doses.

General Side Effects

Abdominal pain, nausea and dyspepsia
Peptic ulcer and gastro-intestinal haemorrhage.

Hypersensitivity reactions

Oedema, hypertension and cardiac failure

General Side effects-Notes

Gastrointestinal disorders are the most commonly reported side effects.

Dose

For the treatment of episcleritis

Adults & children (12 years and over): 100mg daily in 2 divided doses with or after food.

Total daily dose may increase to 300mg in divided doses.

Storage

Store below 25ºC.

Flurbiprofen Sodium

Legal Classification

POM: May be used and prescribed by optometrist independent prescribers.

Available Preparations

Ocufen: eye drops, single dose units containing 0.03% flurbiprofen sodium , polyvinyl alcohol 1.4% (Allergan)

Drug type

Anti-inflammatory.

Classification

Non-steroidal anti-inflammatory drug (NSAID).

Indications/Use

Flurbiprofen is indicated for the inhibition of intra-operative miosis and reduction of inflammation following ocular surgery. It is also used off-licence for the treatment of inflammatory disorders of the anterior segment. See Clinical Management Guideline on Episcleritis.

Contraindications

Hypersensitivity to flurbiprofen or any component of the preparation. There is the potential of cross sensitization with aspirin or other NSAIDs and flurbiprofen is not indicated in individuals who have previously demonstrated sensitivity to these drugs. Contraindicated in herpes simplex keratitis.

Cautions

Flurbiprofen should be used with caution in patients with known bleeding tendencies or patients with a history of peptic ulceration. Wound healing may be delayed with flurbiprofen.

Pregnancy and Lactation

Pregnancy risk category C. Safety of flurbiprofen during pregnancy has not been established. Therefore, the use of flurbiprofen during pregnancy requires that the benefits be weighed against the potential risks to the foetus. Contraindicated in the third trimester of pregnancy. Flurbiprofen is excreted in human breast milk at low levels. Caution should be exercised when prescribing to breast-feeding women.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient burning and singing on instillation
Ocular hyperaemia

Ocular Side-effects-Notes

Transient burning on instillation is very common.

General Side-effects

Headache

Dose

Adults: one drop should be instilled 4 times daily for at least a week. Not licensed for use in children.

Storage

Store below 25ºC.

Fusidic acid

Legal Classification

POM: For use and supply by all optometrists. May be prescribed by independent prescribing optometrists.

Available Preparations

Fucithalmic: viscous gel, 1% fusidic acid (Leo)

Drug type

Anti-infective.

Classification

Anti-bacterial.

Indications/Use

Fusidic acid is indicated for the topical treatment of bacterial conjunctivitis where the organism is known to be sensitive to the antibiotic. Fusidic acid is particularly active against *staphylococcus* organisms. See Clinical Management Guideline on Conjunctivitis (Bacterial).

Contraindications

Hypersensitivity to fusidic acid or any component of the preparation.

Cautions

Should be used as second line therapy for bacterial conjunctivitis due to the risk of developing staphylococcal resistance. Bacterial resistance has been reported to occur with the use of fusidic acid. As with all antibiotics, extended or recurrent use may increase the risk of developing antibiotic resistance.

Contact lenses should not be worn during treatment. Contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Limited clinical data on exposed pregnancies is available, and animal studies and many years of clinical experience with systemic and topical fusidic acid suggest that fusidic acid is devoid of teratogenic effect. Consequently any risk to the foetus is unlikely using the very low doses of fusidic acid applied topically in an ophthalmic preparation. Can be administered during pregnancy if considered necessary.
No effects on the infant are anticipated since the systemic exposure of the breastfeeding woman to fusidic acid is negligible. Topical fusidic acid can be used during breastfeeding.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient burning
Transient stinging
Transient blurring

Ocular Side-effects-Notes

Pooled data from clinical studies, including more than 2,600 patients with acute conjunctivitis, showed that undesirable effects occurred in approximately 10% of the patients; primarily short lasting local discomfort in the form of stinging and burning sensation. Transient itching, burning and stinging after application (in approx. 3% of patients). Hypersensitivity reactions may rarely occur characterized by urticaria (localized or generalized).

General Side-effects

None reported.

Dose

For adults & children (1 month and over): One drop to be instilled into the eye twice daily.

Treatment should be continued for at least 48 hours after the eye returns to normal.

Storage

Store below 25ºC.

Ganciclovir

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

Available Preparations

Virgan: eye gel, 0.15% ganciclovir (Spectrum Thea)

Drug type

Anti-infective.

Classification

Anti-viral.

Indications/Use

Ganciclovir is indicated for the treatment of herpes simplex keratitis. See Clinical Management Guideline on Herpes Simplex Keratitis.

Contraindications

Hypersensitivity to ganciclovir or any component of the preparation.

Cautions

Patients should avoid wearing contact lenses during treatment with ganciclovir eye gel.

Pregnancy and Lactation

Pregnancy risk category C. Teratogenicity has been observed in animal studies with systemic ganciclovir. There is no experience regarding the safety of VIRGAN eye gel in human

pregnancy or lactation. Administration during pregnancy and lactation is therefore not recommended, except for compelling reasons.

Interactions

Although the quantities of ganciclovir passing into the general circulation after ophthalmic use are small, the risk of drug interactions cannot be ruled out.
In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Superficial punctate keratopathy
Burning sensations or brief tingling sensations
Visual disturbance on application

Ocular Side-effects-Notes

In trials of ganciclovir eye gel, adverse events were mild and did not result in a treatment interruption.

General Side-effects

None reported

Dose

Adults: Instil one drop of gel in the inferior conjunctival sac of the eye to be treated, 5 times a day until complete corneal re-epithelialisation. Then 3 instillations a day for 7 days after healing.

Not licensed for use in children.

Storage

Store below 25ºC.

Homatropine Hydrobromide

Legal Classification

POM: For use and supply by additional supply optometrists. May be used and prescribed by independent prescribing optometrists.

Available Preparations

Homatropine: eye drops, 1% homatropine hydrobromide (non-proprietary)

Drug Type

Mydriatic and cycloplegic.

Classification

Antimuscarinic.

Indications

Cycloplegic refraction. Also used for dilating the pupil in anterior uveitis, the alleviation of ciliary spasm following corneal abrasion and for penalisation therapy in amblyopia. See Clinical Management Guidelines on Corneal Abrasion and Anterior Uveitis.

Contraindications

Hypersensitivity to homatropine or any component of the preparation.
Contraindicated in patients with confirmed or suspected angle-closure as an acute attack may be precipitated.

Cautions

Use with caution in patients at risk of systemic effects e.g. neonates, debilitated or elderly patients or patients with Downs Syndrome. Children with brain damage may also demonstrate a hyper-reactive response to homatropine. Systemic absorption may be reduced by compressing the lacrimal sac at the medial canthus during, and for 2-3 mins after instillation.
Soft contact lenses should not be worn during treatment. Contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Safety of homatropine for use in pregnancy has not been established. Homatropine passes into breast milk in small amounts and may cause anti-cholinergic effects in babies of nursing mothers.

Interactions

The effect of antimuscarinic agents may be enhanced by the concomitant administration of other drugs with antimuscarinic properties such as amantadine, some anti-histamines, butyrophenones, phenothiazines and tricyclic anti-depressants. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging
Transient blurring
Photophobia
Conjunctival hyperaemia
Conjunctival oedema
Raised intra-ocular pressure

Ocular Side Effects-Notes

Hypersensitivity reactions may rarely occur, characterised by an allergic lid reaction, hyperaemia and follicular conjunctivitis.

General Side Effects

Dry mouth

Dry skin

Flushing

Increased body temperature

Tachycardia

CNS effects

General Side effects-Notes

Anticholinergic effects e.g. dry mouth, flushing etc. are more likely to occur in infants and children, although reduced likelihood compared to atropine. CNS effects are rare (restlessness, hallucinations).

Dose

Not recommended in children <3 months.

Adults & children (3 months and over):

For cycloplegic refraction: use 1 drop 2 times per day for 1-3 days before refraction.

For uveitis: use 1 drop 1-2 times per day.

For alleviation of ciliary spasm: use 1 drop every 3-4 hours.

Storage

Store below 25ºC. Protect from light.

Hydroxyethylcellulose

Legal Classification

P: For use and supply by all optometrists.

Available Preparations

Single Use (Preservative-free):

Minims Artificial Tears: eye drops, 0.44% hydroxyethylcellulose, 0.35% sodium chloride (Bausch & Lomb)

Drug Type

Artificial tears/ Ocular lubricants.

Classification

Artificial tears.

Indications

Tear substitute for the treatment of dry eye. See Clinical Management Guideline on Tear Deficiency.

Contraindications

Hypersensitivity to hydroxyethylcellulose or any component of the preparation.

Cautions

None.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies of hydroxyethylcellulose in pregnant woman. However, topical application is not thought to pose a significant risk. Similarly, the possibility of secretion into breast milk is low.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

General Side Effects

None

Dose

Adults & children (12 years and over). Apply 1 or 2 drops three to four times per day or as required.

Storage

Store below 25ºC.

Hypromellose

Legal Classification

P/CE: For use and supply by all optometrists.

Available Preparations

Hypromellose: eye drops, 0.3% hypromellose (non-proprietary)

Artelac: eye drops, 0.32% hypromellose (Bausch & Lomb)

Isopto Alkaline: eye drops, 1% hypromellose (Alcon)

Isopto Plain: eye drops, 0.5% hypromellose (Alcon)

Tears Naturale: eye drops, 0.3% hypromellose, 0.1% dextran 70 (Alcon)

Multidose (Preservative-free)

Tear-Lac: eye drops, 0.3% hypromellose (Scope Ophthalmics)

Single Use (Preservative-free):

Artelac SDU: eye drops, 0.32% hypromellose (Bausch & Lomb)

Hydromoor: eye drops, 0.3% hypromellose (Moorfields)

Lumecare Preservative Free Tear Drops: eye drops, 0.3% hypromellose (Medicom)

Tears Naturale Single Dose: eye drops, 0.3% hypromellose, 0.1% dextran 70 (Alcon)

Drug Type

Artificial tears/ Ocular lubricants. See Clinical Management Guideline on Tear Deficiency.

Classification

Artificial tears.

Indications

Tear substitute for the treatment of dry eye.

Contraindications

Hypersensitivity to hypromellose or any component of the preparation.

Cautions

Multidose preparations contain benzalkonium chloride as a preservative, which may accumulate in soft contact lenses and cause irritation. Consider single use (unpreserved) preparations in soft lens wearers. Consult preservative tables for contact lens compatibility.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies of hypromellose in pregnant woman or lactation. Hypromellose should be used with caution in pregnant or nursing mothers, and only if the expected benefit is greater than any possible risk to the developing foetus or baby.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

Transient stinging

General Side Effects

None

Dose

Adults & children (1 month and over). Apply 1 or 2 drops three to four times per day or as required.

Storage

Store below 25ºC.

Ibuprofen

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

P: For use and supply by all optometrists.

GSL: For use and supply by all optometrists.

Available Preparations

POM:

Ibuprofen: tablets, 200, 400, 600mg ibuprofen (non-proprietary)

Brufen: tablets, 200, 400, 600mg ibuprofen (Abbott Healthcare)

Ibuprofen: oral suspension, 100mg ibuprofen per 5ml dose (non-proprietary)

Modified release:

Brufen Retard: tablets 800mg ibuprofen (Abbott Healthcare)

Fenbid: tablets 300mg ibuprofen (Mercury)

P and GSL (GSL contain no more than 16 tablets):

Ibuprofen: tablets, 200mg ibuprofen (Non-proprietary)

Ibuprofen: tablets, 400mg ibuprofen (Non-proprietary)

Anadin Ibuprofen: tablets, 200mg ibuprofen (Wyeth Consumer Healthcare)

Anadin Ultra Double Strength: tablets, 400mg (Wyeth Consumer Healthcare)

Cuprofen: tablets, 200mg ibuprofen (SSL International)

Cuprofen Maximum Strength: tablets 400mg ibuprofen (SSL International)

Nurofen Liquid Capsules: capsules, 200mg ibuprofen (Crookes Healthcare Ltd)

Nurofen Liquid Capsules: capsules, 400mg ibuprofen (Crookes Healthcare Ltd)

Combination products:

Cuprofen Plus: tablets, 200mg ibuprofen and 12.8mg codeine phosphate (SSL International)

Nurofen Plus: tablets, 200mg ibuprofen and 12.8mg codeine phosphate (Crookes Healthcare Ltd)

Preparations for children:
P and GSL (GSL no more than 100ml):
Calprofen Ibuprofen Suspension : oral suspension, 100mg ibuprofen per 5ml dose (Mc Neil Products Ltd)
Cuprofen for Children: 100mg ibuprofen per 5ml dose (SSL International)
Nurofen for Children: oral suspension, 100mg ibuprofen per 5ml dose (Crookes Healthcare)

Drug Type

Non-opioid analgesics.

Classification

Non-steroidal anti-inflammatory analgesic.

Indications

Mild to moderate pain from a variety of causes.

Contraindications

Ibuprofen should be avoided in patients with gastric ulcers or a history of gastric problems and patients with a history of bronchospasm, rhinitis, urticaria, particularly associated with therapy with aspirin or other non-steroidal anti-inflammatory drugs.

Cautions

The elderly are at increased risk of NSAID-induced adverse reactions. Particular caution is required in patients with renal or hepatic impairment. The dose should be as low as possible.

Pregnancy and Lactation

Pregnancy risk category B. Most manufacturers recommend that ibuprofen should not be used during pregnancy. Ibuprofen passes into breast milk in very low levels - less than 0.6%

of the maternal dose. It is also frequently given directly to infants to reduce fever. It is therefore considered safe to be used in nursing mothers.

Interactions

Should not be used with other NSAIDs. Should be used with caution in patients taking anticoagulants, diuretics, antihypertensives, lithium, methotrexate or zidovudine.

Ocular Side Effects

Transient blurring

Refractive changes

Diplopia

Dry eyes

Photophobia

Colour vision disturbances

Ocular Side Effects-Notes

Ocular side effects are rare. Transient blurred vision is the most common side effect. Other well documented adverse reactions include: refractive changes, diplopia, dry eyes, photophobia and colour vision disturbances.

General Side Effects

Abdominal pain, nausea and dyspepsia

Peptic ulcer and gastro-intestinal haemorrhage.

Thrombocytopenia.

Headache

Dizziness

Hearing disturbance.

General Side effects-Notes

Dyspepsia is relatively common. Other side effects are rare. Hypersensitivity reactions have been reported following treatment with ibuprofen. These may consist of (a) non-specific allergic reactions and anaphylaxis, (b) respiratory tract reactivity e.g. aggravating asthma, bronchospasm or dyspnoea, or (c) assorted skin disorders, including rashes of various types.

Dose

Adults & children (12 years and over): Initial dose 2x 200mg tablets, then if necessary, 1 or 2 tablets every 4 hours (with or after food). Do not exceed 6 tablets daily (1200mg).

Child preparations:

Infants 3-6 months: one 2.5 ml dose may be taken 3 times in 24 hours.

Infants 6-12 months: one 2.5 ml dose may be taken 3-4 times in 24 hours.

Children 1-3 years: one 5 ml dose may be taken 3 times in 24 hours.

Children 4-6 years: one 7.5 ml (5ml+2.5ml) dose may be taken 3 times in 24 hours.

Children 7-12 years: one 10 ml dose (2 x 5 ml) may be taken 3 times in 24 hours.

Storage

Store below 25ºC.

Ketorolac Trometamol

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

Available Preparations

Acular: eye drops, 0.5% ketorolac sodium (Allergan)

Drug type

Anti-inflammatory.

Classification

Non-steroidal anti-inflammatory drug (NSAID).

Indications/Use

Ketorolac is indicated for the prophylaxis and reduction of inflammation following ocular surgery. It is also used off-licence for the treatment of inflammatory disorders of the anterior segment. See Clinical Management Guidelines on Pinguecula, Pterygium and Episcleritis.

Contraindications

Hypersensitivity to ketorolac or any component of the preparation.
Topical NSAIDs should be used with caution in patients with complicated ocular surgeries, corneal denervation, corneal epithelial defects, diabetes mellitus, ocular surface diseases (e.g. dry eye syndrome), rheumatoid arthritis, or repeat ocular surgeries within a short period of time, as they may be at increased risk for corneal adverse events which may become sight threatening.

There is the potential of cross sensitization to aspirin or other NSAIDs and ketorolac is not indicated in individuals who have previously demonstrated sensitivity to these drugs.

Cautions

Ketorolac should be used with caution in patients with known bleeding tendencies or patients with a history of peptic ulceration. All NSAIDS may slow down or delay wound healing. There have been post-marketing reports of bronchospasm or exacerbation of asthma in patients, who have either a known hypersensitivity to aspirin/NSAIDs or a past medical history of asthma. Caution is therefore recommended in the use of ketorolac in these individuals.

Concomitant use of ketorolac and corticosteroids should be avoided in patients susceptible to corneal epithelial breakdown. Contact lenses should not be worn during treatment. Contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Data is limited on the safety of ketorolac in pregnancy. Therefore, the use of ketorolac during pregnancy requires that the benefits be weighed against the potential risks to the foetus. Ketoroloc is excreted in human breast milk at low levels. Caution should be exercised when prescribing to breast-feeding women.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Ocular stinging or burning

Superficial punctuate keratitis

Eye pain

Eyelid/ conjunctival oedema

Conjunctival hyperaemia

Itching

Hypersensitivity reactions

Blurred vision

Corneal infiltrates

Dry eye

Corneal ulcer

Epiphora

Ocular Side-effects-Notes

Transient burning on instillation is very common, eye pain, lid/conjunctival oedema, itching and ocular hyperaemia are common, whereas other side effects are rare. Post-marketing reports of corneal damage with topical NSAIDs have been received, although generally in eyes receiving corticosteroids and with predisposing ocular morbidity.These events may be sight threatening. Patients with evidence of corneal epithelial breakdown should immediately discontinue use of topical NSAIDs and should be closely monitored for corneal health.

General Side-effects

Headache

Bronchospasm

General Side effects-Notes

There have been post-marketing reports of bronchospasm or exacerbation of asthma in patients with known hypersensitivity to aspirin . Caution is recommended in using topical NSAIDs in these individuals.

Dose

Adults: one drop should be instilled 3 times daily for up to 3 weeks. Not licensed for use in children.

Storage

Store below 25ºC.

Ketotifen

Legal Classification

POM: For use and supply by additional supply optometrists. May be used and prescribed by independent prescribing optometrists.

Available Preparations

Zaditen: eye drops, 250 micrograms/ml ketotifen (as fumarate) (Spectrum Thea)

Drug Type

Anti-inflammatory.

Classification

Anti-histamine.

Indications

Treatment of seasonal allergic conjunctivitis. See Clinical Management Guideline on Conjunctivitis (Seasonal and Perennial).

Contraindications

Hypersensitivity to ketotifen or any component of the preparation.

Cautions

Contact lenses should not be worn during treatment. Preparation contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies in pregnant woman. Should be used with caution during pregnancy, and only if the expected benefit to the mother is greater than any possible risk to the foetus or baby. Ketotifen has been identified in breast milk of animals following oral administration, however topical administration to humans is unlikely to produce detectable quantities in breast milk and therefore ketotifen can be used in nursing mothers.

Interactions

The use of systemic forms of ketotifen may potentiate the effect of CNS depressants, antihistamines and alcohol. Although this has not been observed with ketotifen eye drops, the possibility of such effects cannot be excluded.
In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between each applications of each preparation.

Ocular Side Effects

Transient burning
Transient stinging
Transient blurring during instillation
Punctate corneal epithelial erosions
Pain
Dry eyes
Hypersensitivity reactions

Ocular Side Effects-Notes

Eye irritation, eye pain, increased corneal epithelial erosions occur in 1-2%. Transient irritation and punctate keratitis occurs in 1-2%. Other adverse reactions are rare.

General Side Effects

Headaches
Rhinitis
Rashes

Somnolence

General Side Effects-Notes

General side effects are rare (<1%).

Dose

Adult & children (3 years and over), apply 1 drop twice daily.

Storage

Store below 25°C.

Levocabastine

There are currently no preparations commercially available in the UK for this drug.

Lid Care Products

Legal Classification

CE: For use and supply by all optometrists.

Available Preparations

Blephaclean: sterile lid cleaning pads (Spectrum Thea)

Blephagel: hypoallergenic gel (Spectrum Thea)

Blephagel PF: preservative free gel (Spectrum Thea)

Blephasol: solution (preservative-free)(Spectrum Thea)

Lid-Care: solution (Ciba)

Lid-Care: sterile lid cleaning pads (Ciba)

Ocusoft Lid Scrub Original Formula: sterile lid cleaning pads (Scope Ophthalmics)

Ocusoft Original Bottle: foaming eyelid cleanser (Scope Ophthalmics)

Ocusoft Lid Scrub Plus Formula: sterile lid cleaning pads (Scope Ophthalmics)

Ocusoft Plus Bottle: foaming eyelid cleanser (Scope Ophthalmics)

Supranettes: sterile lid cleaning pads (Alcon)

Drug Type

Lid Care Products

Classification

Lid Care Products

Indications

Eyelid margin hygiene e.g. in the management of blepharitis

See Clinical Management Guideline on Blepharitis.

Contraindications

Hypersensitivity to any component of the preparation.

Cautions

Do not instill solutions directly into the eyes

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies of the components of lid care products in pregnant woman or lactation. However, there is minimal risk of systemic absorption during normal external use of lid care products.

Interactions

There are no reported interactions.

Ocular Side Effects

Transient stinging

General Side Effects

None

Dose

Adults & children (1 month and over). Sterile cleaning pads: rub cleaning pad/ wipe several times over the eyelid margins to remove any debris. Use a fresh pad/ wipe for each eye.
Blephagel applied to the eyelid and eyelid margins in the morning and at bedtime using a lint free pad.
Ocusoft foaming eyelid cleanser: close eyes and gently massage onto eyelids using side-to-side strokes with lint free pad or fingertip for 30 seconds. Then, rinse the eye thoroughly with water.

Storage

Store below 25ºC.

Lidocaine Hydrochloride (Lignocaine)

Legal Classification

POM: For use by all optometrists.

Available Preparations

Single Use (Preservative-free)

Minims Lidocaine and Fluorescein : eye drops, 4% lidocaine hydrochloride, 0.25% fluorescein (Bausch & Lomb)

Drug Type

Local anaesthetic.

Classification

Amide-type local anaesthetic.

Indications

Lidocaine combined with fluorescein is used for the measurement of intraocular pressure by Goldmann applanation tonometry.

Contraindications

Hypersensitivity to lidocaine or fluorescein.

Cautions

The eye should be protected from foreign bodies and rubbing during the period of anaesthesia (up to 30 minutes). Ideally, the patient should not leave the practice until corneal sensation has returned.

Pregnancy and Lactation

Pregnancy risk category B. No well controlled clinical trials have been conducted in pregnancy and lactation. However, this combination has been used for many years without apparent ill-effects.

Interactions

None reported.

Ocular Side Effects

Transient stinging

Transient blurring

Punctate keratitis

Ocular Side Effects-Notes

Hypersensitivity reactions may rarely occur, characterised by allergic conjunctivitis and peri-orbital oedema.

General Side Effects

None reported.

Dose

Adults & children (3 months and over). One drop is sufficient to anaesthetise the surface of the eye to allow tonometry after one minute.

Storage

Store below 25°C. Protect from light.

Liquid Paraffin

Legal Classification

P: For use and supply by all optometrists.

Available Preparations

Lacri-Lube: eye ointment, 57.3% white soft paraffin, 42.5% liquid paraffin, 0.2% wool fat derivatives (Allergan)
Vit A-POS: eye ointment, retinol palminate 250 units/g, white soft paraffin, light liquid paraffin, wool fat (Scope Ophthalmics)

Drug Type

Artificial tears/ Ocular lubricants.

Classification

Ocular lubricant.

Indications

Lubrication and protection of the eye in conditions such as exposure keratitis, decreased corneal sensitivity, recurrent corneal erosions and keratoconjunctivitis sicca. See Clinical Management Guidelines on Tear Deficiency, Recurrent Corneal Erosion, Ectropion, Entropion, Trichiasis, Facial Palsy.

Contraindications

Hypersensitivity to liquid paraffin or any component of the preparation.

Cautions

Contact lenses should be removed prior to instillation and should not be inserted for at least 30 minutes.

Pregnancy and Lactation

Pregnancy risk category C.The constituents of the available preparations have been used as pharmaceutical agents for many years with no untoward effects. No special precautions are therefore necessary for their use in pregnancy or lactation.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

Transient stinging

Ocular Side Effects-Notes

Transient blurring lasting 1-15 minutes occurs following instillation. Hypersensitivy reactions can rarely occur.

General Side Effects

None

Dose

Adults & children (1 month and over). Apply a small amount to the affected eye(s) as required.

Storage

Store below 25ºC.

Lodoxamide

Legal Classification

POM : For use and supply by additional supply optometrists. May be used and prescribed by optometrist independent prescribers.

P: For use and supply by all optometrists.

Available Preparations

POM:

Alomide: eye drops, 0.1% lodoxamide (as trometamol) (Alcon)

P:

Alomide Allergy: eye drops, 0.1% lodoxamide (Alcon)

Indications

Treatment of allergic conjunctivitis. See Clinical See Clinical Management Guidelines on Atopic keratoconjunctivitis, Vernal keratoconjunctivitis, Conjunctivitis (Acute allergic), Conjunctivitis- seasonal and perennial allergic and Contact lens-associated papillary conjunctivitis.

Drug type

Anti-inflammatory.

Classification

Mast cell stabilizer.

Contraindications

Hypersensitivity to lodoxamide or any component of the preparation.

Cautions

Contact lenses should not be worn during treatment. Preparation contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category B. Reproduction studies with lodoxamide administered orally to animals in doses of many times greater than the ophthalmic dose produced no evidence of foetal toxicity. However, there are no adequate and well-controlled studies in pregnant women. Lodoxamide should therefore be used during pregnancy only if clearly needed. It is not known whether lodoxamide is secreted in human milk and caution should be exercised when lodoxamide is administered to nursing mothers.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between each applications of each preparation.

Ocular Side Effects

Transient burning

Transient stinging

Blurred vision

Lid margin crusting

Conjunctival hyperaemia

Itching

Tearing

Ocular Side Effects-Notes

Transient burning/stinging on instillation occurs in approx.13% of patients. Other adverse events occur in 1-5% of patients and are often difficult to distinguish from the symptoms of allergic conjunctivitis.

General Side Effects

Headaches

Dizziness

Nausea

Stomach discomfort

Flushing

General Side Effects-Notes

Headaches reported in 1-2% of patients. Other systemic side effects are rare (<1%).

Dose

Adults & children (4 years and over), apply 1 drop four times daily. Full effect may take several days to occur.

Storage.

Store below 25°C.

Loratadine

Legal Classification

P: For use and supply by all optometrists.

GSL: For use and supply by all optometrists.

Available Preparations

P and GSL (GSL, pack size 7 tablets or less):

Loratidine: tablets, 10mg loratidine (non-proprietary)

Boots Non Drowsy Hayfever and Allergy Relief: 10mg loratidine *(Boots Company PLC)*

Boots Hayfever Relief All Day: oral solution, 1mg/ml loratidine (Boots Company PLC)

Clarityn Allergy: tablets, 10mg loratidine (MSD)

Clarityn Rapide: dissolvable tablets, 10mg loratidine (MSD)

Preparations for children:

Clarityn Allergy Syrup: oral solution, 1mg/ml loratidine (MSD)

Drug Type

Anti-histamine.

Classification

Non-sedative antihistamine.

Indications

For the symptomatic relief of allergic rhinitis (hay fever), including ocular symptoms and allergic skin conditions such as urticaria. See Clinical Management Guideline on Conjunctivitis (Seasonal and Perennial).

Contraindications

Hypersensitivity to loratidine or any component of the preparation.

Cautions

Second generation antihistamines are less lipophilic and do not penetrate the blood-brain barrier to any significant extent. They are therefore less likely to cause centrally mediated effects e.g. drowsiness. However, approx. 6% of patients experience such effects and therefore patients need to be warned that loratadine may affect driving and other skilled tasks.
Use with caution in patients with renal or hepatic impairment.

Pregnancy and Lactation

Pregnancy risk category B: In animal studies, loratadine was not teratogenic in doses many times in excess of the maximum recommended human dose. However, there are no adequate and well-controlled studies in pregnant women and because animal studies are not always predictive of human response, loratadine should be used in pregnancy only if clearly needed. Loratadine has been reported to be excreted in human breast milk and therefore use of loratadine in nursing mothers is not recommended.

Interactions

Avoid excessive alcohol consumption.

Ocular Side Effects

Dry eyes

Punctate keratitis

Ocular Side Effects-Notes

Ocular side effects are rare.

General Side Effects

Drowsiness

Headache

Nervousness

Fatigue

General Side effects-Notes

General side effects are rare. Loratadine is associated with a much lower incidence of sedation than cetirizine or acrivastine.

Dose

Adults & children (12 years and over): One 10mg tablet once daily.

Children: 2-12 years <30Kg body weight 5ml (5mg) once daily >30Kg 10ml once daily.

Storage

Store below 25ºC.

Loteprednol Etabonate

Legal Classification

POM: May be used and prescribed by optometrist independent prescribers.

Available Preparations

Lotemax: eye drops, 0.5% loteprednol etabonate (Bausch & Lomb)

Drug type

Anti-inflammatory.

Classification

Corticosteroid.

Indications/Use

Loteprednol is indicated in the treatment of inflammation following ocular surgery. It is used off-licence for the treatment of inflammation of the conjunctiva, cornea or anterior segment. See Clinical Management Guidelines on Pterygium, Pinguecula and Episcleritis.

Contraindications

Hypersensitivity to loteprednol or any component of the preparation. Loteprednol is contraindicated in viral diseases of the cornea and conjunctiva, fungal diseases of the eye or other infectious diseases where it may mask infection or enhance an existing infection.

Cautions

Loteprednol, as with other corticosteroids, can cause ocular hypertension and should be used with caution in patients with glaucoma (see Clinical Management Guideline on Steroid Glaucoma).

Prolonged use of corticosteroids may suppress host immune responses and increase the possibility of secondary ocular infection.
In diseases causing thinning of the cornea or sclera, corticosteroids have been associated with perforations.
Contact lenses should not be worn during treatment. Contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Safety of loteprednol during pregnancy has not been established. Therefore, the use of loteprednol during pregnancy requires that the benefits be weighed against the potential risks to the foetus. It is not known if loteprednol is excreted in human breast milk. Caution should be exercised when prescribing to breast-feeding women.

Interactions

Concurrent administration of cycloplegics may increase the risk of raised intra-ocular pressure. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Raised intra-ocular pressure
Posterior sub-capsular cataract formation
Secondary ocular infection
Perforation of the globe

Ocular Side-effects-Notes

The likelihood of ocular hypertension is reduced compared to other corticosteroids e.g. prednisolone. Ocular signs and symptoms similar to the underlying ocular disease being treated were reported with loteprednol in clinical trials e.g. ocular discomfort, epiphora, foreign body sensation, hyperaemia and itching.

General Side-effects

Headache
Taste disturbance

Dizziness

Paresthesia

General Side-effects-Notes

Headache is a common side effect, other side effects are rare.

Dose

Adults: 1-2 drops should be instilled 4 times daily. Duration of therapy should not exceed 2 weeks. Not licensed for use in children.

Storage

Store below 25ºC.

Macrogols (polyethylene glycols)

Legal Classification

CE: For use and supply by all optometrists.

Available Preparations

Systane Multidose Eye Drops: 0.4% polyethylene glycol 400 and 0.3% propylene glycol, hydroxypropyl guar (Alcon)
Systane Ultra: eye drops, 0.4% polyethylene glycol 400, 0.3% propylene glycol, hydroxypropyl guar, sorbitol (Alcon)

Single Use (Preservative-free):
Systane Lubricating Eye Drops: 0.4% polyethylene glycol 400 and 0.3% propylene glycol, hydroxypropyl guar (Alcon)
Systane Ultra: eye drops, 0.4% polyethylene glycol 400, 0.3% propylene glycol, hydroxypropyl guar, sorbitol

Drug Type

Artificial tears/ Ocular lubricants.

Classification

Artificial tears.

Indications

Treatment of dry eye or an unstable tear film. See Clinical Management Guidelines on Tear Deficiency.

Contraindications

Hypersensitivity to polyethylene glycol or any component of the preparation.

Cautions

Multidose preparation contains preservatives which may accumulate in soft contact lenses and cause irritation. Consider single use (unpreserved) preparations in soft lens wearers. Consult preservative tables for contact lens compatibility.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies of in pregnant woman or lactation. This product should therefore be used with caution, and only if the expected benefit to the mother is greater than any possible risk to the foetus or baby.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

Transient stinging

General Side Effects

None

Dose

Adults & children (from 1 month). Apply 1or 2 drops three to four times per day or as required.

Storage

Store below 25ºC.

Minocycline

Legal Classification

POM: May be used and prescribed by optometrist independent prescribers.

Available Preparations

Minocycline: capsules, 50mg minocycline hydrochloride (non-proprietary)

Minocycline: capsules, 100mg minocycline hydrochloride (non-proprietary)

Aknemin: tablets, 50mg minocycline hydrochloride (Almirall)

Aknemin: tablets, 100mg minocycline hydrochloride (Almirall)

Modified Release

Acnamino MR: modified release capsules, 100mg minocycline hydrochloride (Meda)

Minocin MR: modified release capsules, 100mg minocycline hydrochloride (Lederle)

Sebomin MR: modified release capsules, 100mg minocycline hydrochloride (Actavis)

Drug Type

Anti-infective.

Classification

Anti-bacterial.

Indications

Minocycline has been found to be clinically effective in the treatment of a variety of infections caused by susceptible strains of Gram-positive and Gram-negative bacteria and certain other micro-organisms. It has a spectrum of activity similar to other tetracyclines but more active against *Staphylococcus aureus* (see Clinical Management Guidelines on Blepharitis and Ocular Rosacea).

Contraindications

Hypersensitivity to minocycline or component of the preparation. Hypersensitivity to any other members of the tetracycline family. Minocycline is contraindicated in children less than 12 years of age and in pregnant or nursing women.

Cautions

Use with caution in patients with hepatic impairment. May cause photosensitivity and patients should use skin protection, avoid prolonged exposure to sunlight and advised not use tanning equipment. A few cases of pregnancy have been attributed to the use of tetracycline antibiotics with oral contraceptives. Patients taking contraceptives containing oestrogen should be warned that there is a possibility of contraceptive failure and advised to use alternative forms of contraception during treatment. Use with caution in patients with SLE or myasthenia gravis as tetracyclines may exacerbate these conditions.

Pregnancy and Lactation

Pregnancy risk category D: contraindicated in pregnancy. Animal studies have shown that tetracyclines cross the placenta and can cause toxicity to the foetus. Yellow-brown discolouration of the teeth and enamel hypoplasia can occur when drugs of the tetracycline family are administered after the first trimester of pregnancy. Tetracyclines are excreted into breast milk and therefore contraindicated in nursing mothers.

Interactions

Antacids and preparations containing aluminium, calcium, magnesium, zinc, bismuth or iron may decrease the absorption of minocycline. Tetracyclines decrease plasma prothrombin activity and a dose reduction in patients taking anticoagulants may be necessary. Tetracyclines may reduce the effect of oral contraceptives (see cautions).

Ocular Side Effects

Blurred vision

Field loss

Diplopia

Discoloration of the conjunctiva and lacrimal secretions

Ocular Side Effects-Notes

Ocular side effects are rare. Visual disturbance (blurred vision, field loss, diplopia) has been reported in association with benign intracranial hypertension.

General Side Effects

Gastrointestinal disturbances e.g. nausea, vomiting and diarrhoea

Discolouration of teeth and enamel hypoplasia (young children)

Abnormal bone growth (young children)

Headache

Photosensitivity

Dizziness and vertigo

Benign intracranial hypertension

General Side effects-Notes

Gastrointestinal disturbances are commonly reported. Dizziness and vertigo are more common in women. The presence of headache and visual disturbance may indicate benign intracranial hypertension (discontinue therapy).

Dose

For blepharitis and ocular rosacea: treatment may need to be continued for several weeks or months.

Adults: 1 x 50mg tablet daily (for 2 weeks) followed by 100mg daily for 3 months.

Contraindicated in children.

Storage

Store below 25ºC.

Nedocromil Sodium

Legal Classification

POM: For use and supply by additional supply optometrists. May be used and prescribed by independent prescribing optometrists.

Available Preparations

Rapitil: eye drops, 2% nedocromil sodium (Sanofi-Aventis)

Drug type

Anti-inflammatory.

Classification

Mast cell stabilizer.

Indications

For the prevention, relief and treatment of allergic conjunctivitis, including seasonal allergic conjunctivitis, allergic conjunctivitis and vernal kerato-conjunctivitis. Treatment of allergic conjunctivitis.
See Clinical Management Guidelines on Atopic keratoconjunctivitis, Vernal keratoconjunctivitis, Conjunctivitis (Acute allergic), Conjunctivitis- seasonal and perennial allergic and Contact lens-associated papillary conjunctivitis.

Contraindications

Hypersensitivity to nedocromil or any constituent of the preparation.

Cautions

Contact lenses should not be worn during treatment. Preparation contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category B. Animal studies have failed to reveal a hazard with nedocromil sodium. However, as with all medications caution should be exercised during pregnancy (particularly during the 1st trimester).
On the basis of its physico-chemical properties it is considered that only negligible amounts of nedocromil sodium may pass into human breast milk and there is no information to suggest that the use of nedocromil has any undesirable effects upon the baby.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging
Transient burning

Ocular Side Effects-Notes

Transient stinging and burning following instillation is the most common side effects (10-30%).

General Side Effects

Headaches
Distinctive taste

General Side Effects-Notes

Headache is the most commonly reported side effect (approximately 40% of patients).
Distinctive taste sometimes reported.

Dose

Seasonal and perennial conjunctivitis: adults & children (6 years and over), apply 1 drop twice daily, increased if necessary to four times daily. Full effect may take several days to occur. Maximum of 12 weeks treatment for seasonal allergic conjunctivitis.

Vernal keratoconjunctivitis: adults & children (6 years and over), apply four times daily.

Storage

Store below 25°C, away from direct sunlight.

Ofloxacin

Legal Classification

POM: May be used and prescribed by optometrist independent prescribers.

Available Preparations

Exocin: eye drops, 0.3% ofloxacin (Allergan)

Drug type

Anti-infective.

Classification

Anti-bacterial.

Indications/Use

Ofloxacin is indicated for topical treatment of external ocular infections in adults and children caused by ofloxacin-sensitive organisms (see Clinical Management Guideline for Nasolacrimal duct obstruction).

Contraindications

Hypersensitivity to ofloxacin or any component of the preparation.

Cautions

Elderly patients and women may be more sensitive to QT internal (of ECG)-prolonging medications. Therefore, caution should be taken when using fluoroquinolones on this population.

As with other antibiotics prolonged use may lead to the development of bacterial resistance.

Risk of corneal perforation when used to treat patients with corneal epithelial defects and ulcers.

Contains benzalkonium chloride as a preservative, which may accumulate in soft contact lenses and cause irritation. Manufacturer recommends that contact lenses should be removed before instillation and reinserted 15 minutes after administration.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well controlled studies in pregnant women. Systemic quinolones have caused arthropathy in animal studies. Therefore, the use of ofloxacin in pregnancy requires that the benefits be weighed against the potential risks to the foetus. Following systemic administration, ofloxacin has been detected in the milk of nursing mothers. The use of ofloxacin, while nursing, requires that the benefits be weighed against the potential risks to the nursing infant.

Interactions

Certain anti-arrythmics and tricyclic antidepressants.. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient burning

Transient stinging

Transient hyperaemia

Ocular Side-effects-Notes

Transient ocular irritation (burning, stinging, redness, itching or photophobia) on instillation has been commonly reported.

Corneal precipitates have been reported during treatment with topical ophthalmic ofloxacin. However, a causal relationship has not been established.

General Side-effects

Nausea

Headache

Dizziness

Numbness

General Side effects-Notes

Very rarely headache, dizziness, numbness and nausea have been reported in clinical trials. Stevens-Johnson syndrome has been reported in patients receiving topical ophthalmic ofloxacin, however, a causal relationship has not been established.

Dose

For adults & children (all ages): 1-2 drops to be instilled into the eye every 2-4 hours for the first 2 days and then 4 times daily. Treatment should not exceed 10 days.

Storage

Store below 25ºC.

Olopatadine

Legal Classification

POM: For use and supply by additional supply optometrists. May be use and prescribed by independent prescribing optometrists.

Available Preparations

Opatanol: eye drops, 1mg/ml olopatadine (as hydrochloride) (Alcon)

Drug Type

Anti-inflammatory.

Classification

Anti-histamine.

Indications

Treatment of ocular signs and symptoms of seasonal allergic conjunctivitis. See Clinical Management Guideline on Conjunctivitis (Seasonal and Perennial).

Contraindications

Hypersensitivity to olopatadine or to any component of the preparation.

Cautions

Preparation contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation. Manufacturer recommends that an interval of 10-15 mins from instillation before contact lenses can be reinserted. The preparation should not be instilled while wearing contact lenses.

Pregnancy and Lactation

Pregnancy risk category C. Safety in pregnancy has not been established. Animal studies do not indicate direct or indirect harmful effects with respect to pregnancy. However, caution should be exercised when prescribing to pregnant women. Olopatadine has been detected in the milk of nursing rats following oral administration. It is not known whether topical administration to humans could result in sufficient systemic absorption to produce detectable quantities in human breast milk. Olopatadine is therefore not recommended for breast-feeding mothers.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow at least 10 minutes between each application.

Ocular Side Effects

Transient irritation

Eye pain

Dry eye

Keratitis

Itching

Photophobia

Conjunctival hyperaemia

Corneal oedema

Visual disturbance

Mydriasis

Eyelid margin crusting

Ocular Side Effects-Notes

In clinical trials side effects were experienced by 4.5% of patients. The most frequently reported treatment-related undesirable effect in clinical trials was eye pain with an incidence of 0.7%. Other adverse reactions are rare (0.1%).

Ocular adverse reactions identified from post-marketing experience that have not been reported previously in clinical trials include: corneal oedema, conjunctivitis, eye oedema, eye

swelling, mydriasis, visual disturbance, eyelid margin crusting. The frequency at which these events occur is not known.

General Side Effects

Headaches

Nasal dryness

Asthenia

Dizziness

Rhinitis

Hypersensitivity

General Side effects-Notes

Headache and nasal dryness were the most commonly reported general side effects (1-10%). Other general side effects are uncommon. Systemic adverse reactions identified from post-marketing experience that have not been reported previously in clinical trials include: dyspnoea, somnolence, swelling face, dermatitis, erythema, nausea, vomiting, sinusitis, asthenia, malaise. The frequency at which these events occur is not known

Dose

Adults & children (3 years and over), apply 1 drop twice daily. Maximum duration of treatment 4 months.

Storage

Store below 25°C.

Oxybuprocaine Hydrochloride (Benoxinate)

Legal Classification

POM: For use by all optometrists.

Available Preparations

Single Use (Preservative-free):

Minims Oxybuprocaine : eye drops, 0.4% oxybuprocaine hydrochloride (Bausch & Lomb)

Drug Type

Local anaesthetic.

Classification

Ester-type local anaesthetic.

Indications

Ocular anaesthesia for short-term procedures e.g. Goldmann applanation tonometry, gonioscopy, minor surgery.

Contraindications

Hypersensitivity to oxybuprocaine or other ester-type anaesthetics.

In view of the immaturity of the enzyme system which metabolises the ester type local anaesthetics in premature babies, oxybuprocaine should be avoided in these patients.

Cautions

The eye should be protected from foreign bodies and rubbing during the period of anaesthesia (up to 30 minutes). Ideally the patient should not leave the practice until corneal sensation has returned.

Pregnancy and Lactation

Pregnancy risk category C. No well controlled clinical trials have been conducted in pregnancy and lactation. Oxybuprocaine should not be used unless considered essential by the clinician.

Interactions

None reported.

Ocular Side Effects

Transient stinging

Transient blurring

Punctate keratitis

Ocular Side Effects-Notes

Hypersensitivity reactions may rarely occur, characterised by allergic conjunctivitis and peri-orbital oedema.

General Side Effects

None reported.

Dose

Adults & children (1 month and over). One drop is sufficient to anaesthetise the surface of the eye to allow tonometry after one minute. Three drops at 90 second intervals provides sufficient anaesthesia for a foreign body to be removed from the corneal epithelium.

Storage

Store below 25°C. Protect from light.

Oxytetracycline

Legal Classification

POM: May be used and prescribed by optometrist independent prescribers.

Available Preparations

Oxytetracycline: tablets, 250mg oxytetracycline dihydrate (non-proprietary)

Drug Type

Anti-infective.

Classification

Anti-bacterial.

Indications

Oxytetracycline has been found to be clinically effective in the treatment of a variety of infections caused by susceptible strains of Gram-positive and Gram-negative bacteria and certain other micro-organisms (see Clinical Management Guidelines on Blepharitis and Ocular Rosacea).

Contraindications

Hypersensitivity to oxytetracycline or component of the preparation. Hypersensitivity to any other members of the tetracycline family. Oxytetracycline is contraindicated in children less than 12 years of age and in pregnant or nursing women.

Cautions

Use with caution in patients with renal or hepatic impairment. May cause photosensitivity and patients should use skin protection, avoid prolonged exposure to sunlight and advised

not use tanning equipment. A few cases of pregnancy have been attributed to the use of tetracycline antibiotics with oral contraceptives. Patients taking contraceptives containing oestrogen should be warned that there is a possibility of contraceptive failure and advised to use alternative forms of contraception during treatment. Use with caution in patients with SLE or myasthenia gravis as tetracyclines may exacerbate these conditions.

Pregnancy and Lactation

Pregnancy risk category D: contraindicated in pregnancy. Animal studies have shown that tetracyclines cross the placenta and can cause toxicity to the foetus. Yellow-brown discolouration of the teeth and enamel hypoplasia can occur when drugs of the tetracycline family are administered after the first trimester of pregnancy. Tetracyclines are excreted into breast milk and therefore contraindicated in nursing mothers.

Interactions

Antacids and preparations containing aluminium, calcium, magnesium, zinc, bismuth or iron may decrease the absorption of oxytetracycline. Tetracyclines decrease plasma prothrombin activity and a dose reduction in patients taking anticoagulants may be necessary. Tetracyclines may reduce the effect of oral contraceptives (see cautions).

Ocular Side Effects

Blurred vision

Field loss

Diplopia

Discoloration of the conjunctiva and lacrimal secretions

Ocular Side Effects-Notes

Ocular side effects are rare. Visual disturbance (blurred vision, field loss, diplopia) has been reported in association with benign intracranial hypertension.

General Side Effects

Gastrointestinal disturbances e.g. nausea, vomiting and diarrhoea

Discolouration of teeth and enamel hyoplasia (young children)

Abnormal bone growth (young children)

Headache

Photosensitivity

Benign intracranial hypertension

General Side effects-Notes

Gastrointestinal disturbances are commonly reported. The presence of headache and visual disturbance may indicate benign intracranial hypertension (discontinue treatment).

Dose

For blepharitis and ocular rosacea: treatment may need to be continued for several weeks or months.

Adults: 2 x 250mg tablets twice daily.

Contraindicated in children.

Storage

Store below 25ºC.

Paracetamol

Legal Classification

POM: May be used and prescribed by independent prescribing optometrists.

P: For use and supply by all optometrists.

GSL: For use and supply by all optometrists.

Available Preparations

POM:

Paracetamol Tablets: 500mg paracetamol (non-proprietary)

Panadol OA: tablets, 1g paracetamol (GSK)

Combination products:

Co-codamol: tablets, 8mg codeine phosphate, 500mg paracetamol (non-proprietary)

Co-codamol: tablets, 30mg codeine phosphate, 500mg paracetamol (Non-proprietary)

Kapake: tablets, 15mg dihydrocodeine tartrate, 500mg paracetamol (Galen)

P and GSL (P. Pack size up to 32. GSL. Pack size 16 or less):

Paracetamol: tablets, 500mg paracetamol (non-proprietary)

Anadin Paracetamol Tablets: 500mg paracetamol (Wyeth Consumer Healthcare)

Hedex: tablets, 500mg paracetamol (GSK Consumer Healthcare)

Hedex Extra: tablets, 500mg paracetamol (with caffeine) (GSK Consumer Healthcare)

Panadol Advance: tablets,500mg paracetamol (GSK Consumer Healthcare)

Panadol Extra: tablets 500mg paracetamol (with caffeine)(GSK Consumer Healthcare)

Panadol Soluble: effervescent tablets, 500mg paracetamol (GSK Consumer Healthcare)

Preparations for children:

Calpol Six Plus Suspension: 250mg per 5ml paracetamol (Mc Neil Products Ltd)

Calpol Sugar-free Infant Suspension: 120mg per 5ml paracetamol (Mc Neil Products Ltd)

Disprol Paracetamol Suspension: 120mg per 5ml paracetamol, sugar-free (Reckitt Benckister Healthcare)
Medised for children: 120mg per 5ml paracetamol (SSL International PLC)

Combination products:
Anadin Extra: tablets 200mg paracetamol, 300mg aspirin (Wyeth Consumer Healthcare))
Disprin Extra: tablets, 200mg paracetamol, 300mg aspirin (Reckitt Benckister Healthcare)
Panadol Ultra: tablets, 500mg paracetamol, 12.8mg codeine phosphate (GSK Consumer Health)
Solphadeine Plus: capsules, 500mg paracetamol, 8mg codeine phosphate (GSK Consumer Health)
Solphadeine Max: capsules, 500mg paracetamol, 12.8mg codeine hemihydrate (GSK Consumer Health)

Drug Type

Non-opioid analgesics.

Classification

Non-opioid analgesics and anti-pyrexic.

Indications

Mild to moderate pain from a variety of causes and the treatment of pyrexia.

Contraindications

Hypersensitivity to paracetamol or any component of the preparation.

Cautions

Paracetamol is a very safe drug at normal therapeutic dosages, however it is hepatotoxic in overdose. It is therefore extremely important to ensure that patients do not exceed the recommended dose and do not use more than one paracetamol-containing product at a time.
Care is advised in the administration of paracetamol to patients with severe renal or severe hepatic impairment.

Pregnancy and Lactation

Pregnancy risk category B. There is clinical and epidemiological evidence of safety of paracetamol in pregnancy and it is the preferred analgesic in pregnant women, if required. Paracetamol is excreted in breast milk but not in clinically significant amounts. Available published data do not contraindicate breast feeding.

Interactions

No significant interactions relating to short-term use.

Ocular Side Effects

None

General Side Effects

Hypersensitivity reactions

Hepatotoxicity

General Side effects-Notes

Side-effects are rare, but rashes, blood disorders (including thrombocytopenia, leucopenia, neutropenia) have been reported. Hepatotoxicity can occur in overdose and is often fatal.

Dose

Adults & children (12 years and over): 0.5-1g every 4-6 hours. Maximum daily dose 4g.

Children: 3-12 months 60-120mg, 1-5 years 120-250mg, 6-12 years 250-500mg, all 4-6 hourly to a maximum of 4 doses in 24 hours.

Storage

Store below 25ºC.

Paraffin, Yellow, Soft

Legal Classification

P: For use and supply by all optometrists.

Available Preparations

Simple Eye Ointment: eye ointment, 10% liquid paraffin, 10% wool fat in yellow soft paraffin (non-Proprietary)

Drug Type

Artificial tears/ Ocular lubricants.

Classification

Ocular lubricant.

Indications

Lubrication and protection of the eye in conditions such as exposure keratitis, decreased corneal sensitivity, recurrent corneal erosions and keratoconjunctivitis sicca. See Clinical Management Guidelines on Tear Deficiency, Recurrent Corneal Erosion, Ectropion, Entropion, Trichiasis and Facial Palsy.

Contraindications

Hypersensitivity to yellow soft paraffin or any component of the preparation.

Cautions

Contact lenses should be removed prior to instillation and should not be inserted for at least 30 minutes.

Pregnancy and Lactation

Pregnancy risk category C. The constituents of the available preparation have been used as pharmaceutical agents for many years with no untoward effects. No special precautions are therefore necessary for their use in pregnancy or lactation.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

Transient stinging

Ocular Side Effects-Notes

Transient blurring lasting 1-15 minutes occurs following instillation. Hypersensitivity reactions can rarely occur.

General Side Effects

None

Dose

Adults & children (1 month and over). For recurrent erosion apply a small amount into the affected eye before bedtime.

Storage

Store below 25ºC.

Phenylephrine Hydrochloride

Legal Classification

P: For use and supply by all optometrists.

Available Preparations

Single Use (Preservative-free):

Minims Phenylephrine: eye drops, 2.5% phenylephrine hydrochloride (Bausch & Lomb)

Minims Phenylephrine: eye drops,10% phenylephrine hydrochloride (Bausch & Lomb)

Combination product (POM):

Mydrisert: ophthalmic insert for pre-operative mydriasis, 0.28mg tropicamide, 5.4mg phenylephrine (Spectrum Thea)

Drug Type

Mydriatic and Cycloplegic.

Classification

Sympathomimetic.

Indications

Phenylephrine is a directly acting sympathomimetic agent used topically as a mydriatic for diagnostic or therapeutic procedures.

Contraindications

Hypersensitivity to phenylephrine or any other of component of the preparation. Contraindicated in patients with cardiac disease, hypertension, aneurysms, asthma, thyrotoxicosis, long-standing insulin-dependent diabetes mellitus and tachycardia; patients

on monoamine oxidase inhibitors (MAOI), tricyclic anti-depressants and anti-hypertensive agents (including beta-blockers); patients with closed angle glaucoma and patients with a narrow angle (prone to angle-closure precipitated by mydriatics).

Cautions

To reduce the risk of precipitating an attack of angle-closure, evaluate the anterior chamber angle before use. Corneal clouding may occur if phenylephrine 10% is instilled when the corneal epithelium has been denuded or damaged. Avoid 10% phenylephrine in children and the elderly.

Pregnancy and Lactation

Pregnancy risk category C. There is no evidence as to the drug's safety in human pregnancy and should only be used if considered essential by the clinician. Phenylephrine should only be used in pregnancy if the potential benefit outweighs the risk to the developing foetus. Safety in lactation has not been established and therefore should not be used in nursing mothers.

Interactions

Anti-hypertensive Agents: Topical phenylephrine should not be used as it may reverse the action of many anti-hypertensive agents with possible fatal consequences. Phenylephrine also interacts with monoamine oxidase Inhibitors, tricyclic anti-depressants, cardiac glycosides or quinidine (increased risk of cardiovascular events).
In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging
Transient blurring
Photophobia
Lid retraction
Conjunctival allergic reaction
Raised intraocular pressure
Punctate keratitis

Ocular Side Effects-Notes

Transient irritation on instillation, temporarily blurred vision and photophobia are the most common adverse reactions.

General Side Effects

Palpitations

Tachycardia

Cardiac arrhythmias

Hypertension

Headaches

General Side effects-Notes

Serious cardiovascular reactions including coronary artery spasm, ventricular arrhythmias and myocardial infarctions have occurred following topical use of 10% phenylephrine. These sometimes fatal reactions have usually occurred in patients with pre-existing cardiovascular disease.

Dose

Adults & children (2.5% strength, 3 months and over): apply 1 drop to each eye. If necessary, repeat dose once only, at least one hour after the first drop.

10% phenylephrine is contraindicated in children and the elderly (>65 years) because of the increased risk of systemic toxicity.

Storage

Store below 25ºC. Protect from light.

Pilocarpine

Legal Classification

POM: For use and supply by additional supply optometrists. May be used and prescribed by independent prescribing optometrists.

Available Preparations

Pilocarpine hydrochloride: eye drops, 1%, 2% or 4% pilocarpine hydrochloride (non-proprietary)

Single Use (Preservative-free):
Minims Pilocarpine Nitrate: eye drops, 2% pilocarpine nitrate (Bausch & Lomb)

Drug Type

Miotic.

Classification

Parasympathomimetic.

Indications

To overcome the action of the weaker sympathomimetic mydriatics. Emergency treatment of acute angle closure. See Clinical Management Guideline on angle closure glaucoma.

Contraindications

Hypersensitivity to pilocarpine or any component of the preparation. Contraindicated in conditions where pupil constriction is undesirable e.g. anterior uveitis and some forms of secondary glaucoma.

Cautions

Systemic reactions rarely occur at normal doses. However, in the emergency treatment of acute angle-closure the possibility of systemic reactions must be considered because of the higher doses given. Caution is particularly advised in patients with acute heart failure, bronchial asthma, peptic ulceration, hypertension, urinary tract obstruction and Parkinson's disease. Systemic absorption may be reduced by compressing the lacrimal sac at the medial canthus during, and for 2-3 mins after instillation of the drops.

Retinal detachments have been caused in susceptible individuals and those with pre-existing retinal disease, therefore, fundus examination is advised in all patients prior to the initiation of therapy

Contact lenses should not be worn during treatment. Multidose preparations contain benzalkonium chloride as a preservative, which may be accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well controlled studies in pregnant women. Therefore, the use of pilocarpine in pregnancy requires that the benefits be weighed against the potential risks to the foetus. It is not known whether pilocarpine is excreted in breast milk. It should therefore be used with caution in nursing mothers.

Interactions

There are no relevant interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient burning

Transient stinging

Tearing

Induced myopia

Ciliary spasm

Conjunctival vascular congestion

Follicular conjunctivitis

Reduced acuity in low illumination

Retinal detachment

Ocular Side Effects-Notes

Induced myopia and ciliary spasm are common in younger patients. This should be borne in mind when considering the use of pilocarpine for the reversal of mydriasis.

General Side Effects

Headaches

Hypertension

Tachycardia

Bronchial spasm

Salivation

Sweating

Nausea

General Side effects-Notes

Systemic side effects are rare at normal doses but need to be considered when higher doses are given.

Dose

Adults & children (2 years and over). To induce miosis, 1 or 2 drops (2% or 4%) should be used. In cases of emergency treatment of acute angle-closure, 1 drop (4%) should be used every five minutes until miosis is achieved.

Children: 1 month-2 years. Use 0.5% or 1%.

Storage

Store below 25ºC. Protect from light.

Polymyxin B Sulfate

There are currently no ophthalmic preparations commercially available in the UK for this drug.

Povidone

Legal Classification

P: For use and supply by all optometrists.

Available Preparations

Avizor Comfort Drops: eye drops, 1% Povidone (Avizor)

Single Use (Preservative-free):

Oculotect: eye drops, 50mg/ml povidone (Novartis)

Drug Type

Artificial tears/ Ocular lubricants.

Classification

Artificial tears.

Indications

Treatment of dry eye or an unstable tear film. See Clinical Management Guidelines on Tear Deficiency.

Contraindications

Hypersensitivity to povidone or any component of the preparation.

Cautions

None.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies of povidone in pregnant woman or lactation. However, systemic exposure via ocular administration is likely to be negligible. The use of povidone eye drops may be considered during pregnancy, if necessary. It is unknown whether povidone is excreted in human milk. However, no effects on the breastfed newborn/infant are anticipated since the systemic exposure of the breast-feeding woman is negligible. Povidine eye drops can be used during breast-feeding.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

Transient stinging

General Side Effects

None

Dose

Adults & children (1 month and over). Apply 1or 2 drops four times per day or as required.

Storage

Store below 25ºC. Protect from light.

Prednisolone

Legal Classification

POM: May be used and prescribed by optometrist independent prescribers.

Available Preparations

Predsol: eye drops, 0.5% prednisolone sodium phosphate (Focus)

Pred Forte: eye drops, 1% prednisolone acetate (Allergan)

Single use

Minims Prednisolone Sodium Phosphate: eye drops, single dose units containing 0.5% prednisolone sodium phosphate (Bausch & Lomb)

Drug type

Anti-inflammatory.

Classification

Corticosteroid.

Indications/Use

Prednisolone is indicated in the short-term treatment of corticosteroid-responsive inflammation of the conjunctiva, cornea and anterior segment. See Clinical Management Guidelines on Keratitis (Marginal) and Anterior Uveitis.

Contraindications

Hypersensitivity to prednisolone or any component of the preparation. Prednisolone is contraindicated in viral diseases of the cornea and conjunctiva, fungal diseases of the eye or other infectious diseases where it may mask infection or enhance an existing infection.

Cautions

Prednisolone, as with other corticosteroids, can cause ocular hypertension and should be used with caution in patients with glaucoma (see Clinical Management Guideline on Steroid Glaucoma).

Prolonged use of corticosteroids may suppress host immune responses and increase the possibility of secondary ocular infection.

In diseases causing thinning of the cornea or sclera, corticosteroids have been associated with perforations.

Contact lenses should not be worn during treatment. Contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Safety of prednisolone during pregnancy has not been established. Therefore, the use of prednisolone during pregnancy requires that the benefits be weighed against the potential risks to the foetus. It is not known if prednisolone is excreted in human breast milk. Caution should be exercised when prescribing to breast-feeding women.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Blurred vision

Ocular discharge

Ocular pain

Foreign body sensation

Raised intra-ocular pressure

Posterior sub-capsular cataract formation

Secondary ocular infection

Perforation of the globe

Ocular Side-effects-Notes

In clinical trials the most frequently reported side effects were blurred vision (2.6%) and ocular discharge (2.2%). Ocular signs and symptoms similar to the underlying ocular disease being treated were reported in clinical trials e.g. ocular discomfort, epiphora, foreign body sensation, hyperaemia and itching.

General Side-effects

Headache

Hypotension

Rhinitis

Pharyngitis

Taste disturbance

General Side-effects-Notes

General side effects are rare. Local side effects of steroid therapy e.g. skin atrophy, striae and telangiectasia may affect facial skin.

Dose

For adults & children (2 years and over): 1-2 drops should be instilled every 1-2 hours until inflammation is controlled and then reduce frequency.

Storage

Store below 25ºC.

Propamidine Isetionate

Legal Classification

P: For use and supply by all optometrists.

Available Preparations

Brolene: eye drops, 0.1% propamidine isetionate (Sanofi-Aventis)

Golden Eye Drops: 0.1% propamidine isetionate (Typharm)

Drug type

Anti-infective.

Classification

Anti-bacterial.

Indications

Propamidine isetionate is an aromatic diamidine disinfectant, which is active against Gram +ve, but less active against Gram -ve bacteria. It may be used topically for the treatment of minor eye infections e.g. conjunctivitis and blepharitis. It also has antifungal and anti-amoebic properties.

See Clinical Management Guidelines on Conjunctivitis (Bacterial) and Blepharitis.

Contraindications

Hypersensitivity to propamidine or any component of the preparation.

Cautions

Contact lenses should not we worn during treatment. Contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well controlled studies in pregnant women. Therefore, the use of propamidine in pregnancy requires that the benefits be weighed against the potential risks to the foetus. It is not known whether propamidine is excreted in breast milk. It should therefore be used with caution in nursing mothers.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow at least 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging

Transient blurring.

Ocular Side Effects-Notes

Transient stinging and blurring (particularly with the ointment formulation) may occur on instillation. Hypersensitivity reactions may rarely occur.

General Side Effects

None reported.

Dose

For adults & children (1 month and over): eye drops, apply 1 or 2 drops up to four times daily.

Storage

Store below 25°C.

Proxymetacaine Hydrochloride

Legal Classification

POM: For use by all optometrists.

Available Preparations

Single Use (Preservative-free):

Minims Proximetacaine: eye drops, 0.5% proxymetacaine hydrochloride (Bausch & Lomb)

Drug Type

Local anaesthetic.

Classification

Ester-type local anaesthetic.

Indications

Ocular anaesthesia for short-term procedures e.g. Goldmann applanation tonometry, gonioscopy, minor surgery.

Contraindications

Hypersensitivity to proxymetacaine or other ester-type anaesthetics.

In view of the immaturity of the enzyme system which metabolises the ester type local anaesthetics in premature babies, proxymetacaine should be avoided in these patients.

Cautions

Proxymetacaine should be used cautiously and sparingly in patients with known allergies, cardiac disease or hyperthyroidism because of the increased risk of sensitivity reactions.

The eye should be protected from foreign bodies and rubbing during e period of anaesthesia (up to 30 minutes). Ideally the patient should not leave the practice until corneal sensation has returned.

Pregnancy and Lactation

Pregnancy risk factor C. No well controlled clinical trials have been conducted in pregnancy or lactation. Proxymetacaine should not be used unless considered essential by the clinician.

Interactions

None reported.

Ocular Side Effects

Transient stinging

Transient blurring

Punctate keratitis

Conjunctival hyperaemia

Ocular Side Effects-Notes

Pupillary dilatation or cycloplegic effects have rarely been observed with proxymetacaine. A severe, immediate-type apparently hyperallergic corneal reaction may rarely occur. This includes acute, intense and diffuse epithelial keratitis; a grey ground-glass appearance and sloughing of large areas of necrotic epithelium.

General Side Effects

No reported general side effects.

Dose

Adults & children (1 month and over). 1 or 2 drops is sufficient to anaesthetise the surface of the eye to allow tonometry or foreign body to be removed from the corneal epithelium.

Storage

Store at 2 - 8°C. Protect from light. If necessary, the product may be stored at temperatures not exceeding 25°C for up to 1 month only.

Polyvinyl Alcohol

Legal Classification

P/CE: For use and supply by all optometrists.

Available Preparations

Blink Refreshing Eye Drops: 1.4% polyvinyl alcohol (AMO)

Clinitas Ultra 3: 1.8% polyvinyl alcohol, 2% povidone (Altacor)

Liquifilm Tears: eye drops, 1.4% polyvinyl alcohol (Allergan)

PVA 1.4% Tubilux: eye drops, 1.4% polyvinyl alcohol (M&A Pharmachem)

Sno Tears: eye drops, 1.4% polyvinyl alcohol (Bausch & Lomb)

Single use (Preservative-free):

Blink Refreshing Eye Drops, 1.4% polyvinyl alcohol (AMO)

Liquifilm Tears: eye drops, 1.4% polyvinyl alcohol (Allergan)

Drug Type

Artificial tears/ Ocular lubricants.

Classification

Artificial tears.

Indications

Treatment of dry eye or an unstable tear film. See Clinical Management Guidelines on Tear Deficiency.

Contraindications

Hypersensitivity to polyvinyl alcohol or any component of the preparation.

Cautions

Some multidose preparations contain preservatives (benzalkonium chloride or cetrimide) which may accumulate in soft contact lenses and cause irritation. Consider single use (unpreserved) preparations in soft lens wearers.

Pregnancy and Lactation

Pregnancy risk category C. Although there are no adequate and well-controlled studies of polyvinyl alcohol in pregnancy or lactation, polyvinyl alcohol have been used as pharmaceutical agents for many years with no untoward effects. No special precautions are therefore necessary for the use of polyvinyl alcohol in pregnancy and lactation.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

Transient stinging

Eye irritation

Foreign body sensation

Itching

Hyperaemia

General Side Effects

None

Dose

Adults & children (1 month and over). Apply 1 or 2 drops three to four times per day or as required. If > 6 drops per day consider a non-preserved tear supplement.

Storage

Store below 25ºC. Do not refrigerate.

Rimexolone

Legal Classification

POM: May be used and prescribed by optometrist independent prescribers.

Available Preparations

Vexol: eye drops, 1% rimexolone (Alcon)

Drug type

Anti-inflammatory.

Classification

Corticosteroid.

Indications/Use

Rimexolone is indicated in the treatment of inflammation following ocular surgery and the treatment of anterior uveitis and corticosteroid-responsive inflammation of the conjunctiva, cornea and anterior segment. See Clinical Management Guidelines on Pterygium, Pinguecula and Episcleritis.

Contraindications

Hypersensitivity to rimexolone or any component of the preparation. Rimexolone is contraindicated in viral diseases of the cornea and conjunctiva, fungal diseases of the eye or other infectious diseases where it may mask infection or enhance an existing infection.

Cautions

Rimexolone, as with other corticosteroids, can cause ocular hypertension and should be used with caution in patients with glaucoma (see Clinical Management Guideline on Steroid Glaucoma).

Prolonged use of corticosteroids may suppress host immune responses and increase the possibility of secondary ocular infection.

In diseases causing thinning of the cornea or sclera, corticosteroids have been associated with perforations.

Contact lenses should not be worn during treatment. Contains benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. Safety of rimexolone during pregnancy has not been established. Therefore, the use of rimexolone during pregnancy requires that the benefits be weighed against the potential risks to the foetus. It is not known if rimexolone is excreted in human breast milk. Caution should be exercised when prescribing to breast-feeding women.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Raised intra-ocular pressure

Posterior sub-capsular cataract formation

Secondary ocular infection

Perforation of the globe

Blurred vision

Ocular discharge

Ocular discomfort

Foreign body sensation

Ocular Side-effects-Notes

The likelihood of ocular hypertension is reduced compared to other corticosteroids e.g. prednisolone. Ocular signs and symptoms similar to the underlying ocular disease being treated were reported in clinical trials e.g. ocular discomfort, epiphora, foreign body sensation, hyperaemia and itching.

General Side-effects

Headache

Pharyngitis

Rhinitis

Taste disturbance

Hypersensitivity

Dose

Adults: 1 drop should be instilled 4 times daily. Duration of therapy should not exceed 4 weeks. Not licensed for use in children.

Storage

Store below 25ºC.

Sodium Cromoglicate

Legal Classification

POM: For use and supply by additional supply optometrists.

P: For use and supply by all optometrists.

Available Preparations

POM

Sodium cromoglicate: eye drops, 2% sodium cromoglicate (non-proprietary)

Hay Crom Aqueous Eye Drops: 2% sodium cromoglicate (IVAX)

Opticrom Aqueous Eye Drops: 2%.sodium cromoglicate (Sanofi-Aventis)

Vividrin: eye drops, 2% sodium cromoglicate (Bausch & Lomb)

Over the Counter (P formulation)

Pollenase Allergy: eye drops, 2%.sodium cromoglicate (Peach)

Clarityn Allergy: eye drops, 2%.sodium cromoglicate (Schering-Plough)

Galpharm Allergy Eye Drops: 2%.sodium cromoglicate (Galpharm)

Numark Allergy Eye Drops: 2%.sodium cromoglicate (Numark)

Opticrom Allergy Eye Drops: 2%.sodium cromoglicate (Sanofi-Aventis)

Opticrom Hayfever: eye drops, 2%.sodium cromoglicate (Sanofi-Aventis)

Optrex Allergy Eye Drops: 2%.sodium cromoglicate (Reckitt Benckiser Healthcare)

Single use

Catacrom: eye drops, 2% sodium cromoglicate (Moorfields)

In December 2008, 2% sodium cromoglicate eye drops were reclassified from P to GSL for the relief and treatment of symptoms of hay fever (not to be used in children <6 years and not for more than 14 days without consulting a doctor, pharmacist (or optometrist)).

Drug type

Anti-inflammatory.

Classification

Mast cell stabilizer.

Indications

POM: For the prophylaxis and symptomatic treatment of acute allergic conjunctivitis, chronic allergic conjunctivitis and vernal keratoconjunctivitis.

P: For the relief and treatment of seasonal and perennial allergic conjunctivitis.

See Clinical Management Guidelines on Atopic keratoconjunctivitis, Vernal keratoconjunctivitis, Conjunctivitis (Acute allergic), Conjunctivitis- seasonal and perennial allergic and Contact lens-associated papillary conjunctivitis.

Contraindications

Hypersensitivity to sodium cromoglicate or any component of the preparation.

Cautions

Contact lens wear should not be worn during treatment. Multi-dose preparations contain benzalkonium chloride as a preservative, which may accumulate in soft lenses and cause irritation.

Pregnancy and Lactation

Pregnancy risk category C. As with all medications, caution should be exercised especially during the first trimester of pregnancy. Cumulative experience with sodium cromoglicate suggests that it has no adverse effects on foetal development. However, it should be used in pregnancy only where there is a clear clinical need. It is not known whether sodium cromoglicate is excreted in human breast milk but on the basis of its physicochemical properties, this is considered unlikely. There is no information to suggest the use of sodium cromoglicate has any undesirable effects on the baby.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between each application.

Ocular Side Effects

Transient burning

Transient stinging

Transient blurring

Ocular Side Effects-Notes

Transient stinging, burning, and blurring of vision may occur. Other symptoms of local irritation have been reported rarely.

General Side Effects

None reported

Dose

Adults & children (1 month and over): 1 or 2 drops to be administered into each eye 4 times daily.

Storage

Store below 30°C. Protect from direct sunlight.

Sodium Hyaluronate

Legal Classification

CE: For use and supply by all optometrists.

Available Preparations

Artelac Rebalance: eye drops, 0.15% sodium hyaluronate (Bausch & Lomb)

Avizor Moisture Drops: eye drops, 0.1% sodium hyaluronate (Avizor)

Aquify Comfort Drops: eye drops, 5% sodium hyaluronate (CIBA Vision)

Blink Contacts: eye drops, 0.15% sodium hyaluronate (AMO)

Blink Intensive Tears: eye drops, 0.2% sodium hyaluronate, 0.25% PEG400 (AMO)

Optrex Dry Eye Drops: eye drops, 0.15% sodium hyaluronate (Crookes Healthcare)

Oxyal: eye drops, 0.15% sodium hyaluronate (Kestrel Ophthalmics)

Rohto Dry Eyes Relief: eye drops, 0.2% Hyaluronic Acid & Tamarind Seed Polysaccharide (Metholatum)

Vismed Light: 0.1% sodium hyaluronate (TRB Chemica)

Multidose (Preservative-free eye drops):

Hyabak: 0.15% sodium hyaluronate (Spectrum Thea)

Hycosan: 0.1% sodium hyaluronate (Bausch & Lomb)

Hycosan Plus: 0.1% Sodium Hyaluronate & 2% Dexapanthenol (Vitamin B5) (Bausch & Lomb)

Hylo-Care: 0.1% sodium hyaluronate, 2% dexpanthenol (Scope Ophthalmics)

Hylo-Tear: 0.1% sodium hyaluronate (Scope Ophthalmics)

Hylo-Forte: 0.2% sodium hyaluronate (Scope Ophthalmics)

Lumecare Extra Gentle Tear Drops: 0.15% sodium hyaluronate (Lumecare)

Vismed Multi: 0.18% sodium hyaluronate (TRB Chemica)

Single Use (Preservative-free):

Avizor Moisture Drops: eye drops, 0.1% sodium hyaluronate (Avizor)

Blink Contacts: eye drops, 0.15% sodium hyaluronate (AMO)

Blink Intensive Tears: eye drops, 0.2% sodium hyaluronate, 0.25% PEG 400 (AMO)

Clinitas Soothe: eye drops, 0.4% sodium hyaluronate (Altacor)

Hyal drop: eye drops, 0.2% sodium hyaluronate (Bausch & Lomb)

Lubristil: eye drops,0.15% sodium hyaluronate (Moorfields)

Lubristil Gel: gel, 0.15% sodium hyaluronate, 1% xanthan gum (Moorfields)

Ocusan: eye drops, 0.2% sodium hyaluronate (Agepha)

Optrex Dry Eye Drops Singles: eye drops, 0.2% sodium hylauronate (Crookes Healthcare)

Rohto Dry Eyes Relief: eye drops, 0.2% Hyaluronic Acid & Tamarind Seed Polysaccharide (Metholatum)

Vismed Single Dose: eye drops, 0.18% sodium hyaluronate (TRB Chemedica)

Vismed Gel: gel, 0.3% sodium hyaluronate (TRB Chemedica)

Drug Type

Artificial tears/ Ocular lubricants.

Classification

Artificial tears.

Indications

Tear substitute for the treatment of dry eye. See Clinical Management Guideline on Tear Deficiency.

Contraindications

Hypersensitivity to sodium hyaluronate or any component of the preparation.

Cautions

Some multidose preparations contain preservatives (benzalkonium chloride or cetrimide) which may accumulate in soft contact lenses and cause irritation. Consider single use (unpreserved) preparations in soft lens wearers.

Pregnancy and Lactation

Pregnancy risk category C. Although there are no adequate and well-controlled studies of hyaluronic acid in pregnancy or lactation, hyaluronic acid is a natural product and therefore no special precautions are required for its use in pregnancy and lactation.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient blurring

Transient irritation

Ocular Side Effects-Notes

There have been case reports of deep calcium deposition in the cornea in patients with ocular surface disorders and prolonged use of multidose preparations containing high phosphate levels.

General Side Effects

None

Dose

Adults & children (12 years and over). Apply 1 or 2 drops three to four times per day or as required.

Storage

Store below 25ºC.

Soya Lecithin

Legal Classification

CE: For use and supply by all optometrists.

Available Preparations

Eye Logic Spray Relief for Dry Eyes: 1.0% Soya Lecithin, 0.025% Vitamin A palmitate, 0.002% Vitamin E (tocopherol) (Eye Logic)

Optrex Actimist Eye Spray: 1.0% Soya Lecithin, 0.025% Vitamin A palmitate, 0.002% Vitamin E (tocopherol) (Crookes Healthcare)

Drug Type

Artificial tears/ Ocular lubricants

Classification

Liposome spray

Indications

Treatment of dry eye or an unstable tear film. See Clinical Management Guidelines on Tear Deficiency.

Contraindications

Hypersensitivity to any component of the preparation.

Cautions

Do not spray directly into the eyes

Pregnancy and Lactation

Pregnancy risk category C. There are no adequate and well-controlled studies of in pregnant woman or lactation. However, the components of the preparation are either naturally occurring or used extensively in other products e.g. cosmetics with no reported side effects.

Interactions

There are no reported interactions. In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging if sprayed directly into the eyes.

General Side Effects

None

Dose

Adults & children (1 month and over). Hold 10cm away from the closed eyelids and spray 1-2 times onto the closed lids three to four times per day.

Storage

Store below 25ºC.

Tetracaine Hydrochloride (Amethocaine)

Legal Classification

POM: For use by all optometrists.

Available Preparations

Single Use (Preservative-free):

Minims Tetracaine: eye drops, 0.5% tetracaine hydrochloride (Bausch & Lomb)

Minims Tetracaine: eye drops, 1% tetracaine hydrochloride (Bausch & Lomb)

Drug Type

Local anaesthetic.

Classification

Ester-type local anaesthetic.

Indications

Topical anaesthesia for short-term procedures e.g. Goldmann applanation tonometry, gonioscopy, minor surgery.

Contraindications

Hypersensitivity to tetracaine or other ester-type anaesthetics.

In view of the immaturity of the enzyme system which metabolises the ester type local anaesthetics in premature babies, tetracaine should be avoided in these patients.

Cautions

The eye should be protected from foreign bodies and rubbing during the period of anaesthesia (up to 30 minutes). Ideally the patient should not leave the practice until corneal sensation has returned.

Pregnancy and Lactation

Pregnancy risk category C. No well controlled clinical trials have been conducted in pregnancy and lactation. Tetracaine should not be used unless considered essential by the clinician.

Interactions

Tetracaine should not be used in patients taking sulphonamides.

Ocular Side Effects

Transient stinging

Transient blurring

Punctate keratitis

Conjunctival hyperaemia

Ocular Side Effects-Notes

A severe, immediate-type apparently hyperallergic corneal reaction may rarely occur. This includes acute, intense and diffuse epithelial keratitis; a grey ground-glass appearance and sloughing of large areas of necrotic epithelium.

General Side Effects

No reported general side effects.

Dose

Adults & children (1 month and over). 1 or 2 drops is sufficient to anaesthetise the surface of the eye to allow tonometry or foreign body to be removed from the corneal epithelium.

Storage

Store below 25°C. Protect from light.

Tetracycline

Legal Classification

POM: May be used and prescribed by optometrist independent prescribers.

Available Preparations

Tetracycline: tablets, 250mg tetracycline hydrochloride (non-proprietary)

Drug Type

Anti-infective.

Classification

Anti-bacterial.

Indications

Tetracycline has been found to be clinically effective in the treatment of a variety of infections caused by susceptible strains of Gram-positive and Gram-negative bacteria and certain other micro-organisms. See Clinical Management Guideline on Blepharitis and Ocular Rosacea.

Contraindications

Hypersensitivity to tetracycline or component of the preparation. Hypersensitivity to any other members of the tetracycline family. Tetracycline is contraindicated in children less than 12 years of age and in pregnant or nursing women.

Cautions

Use with caution in patients with renal or hepatic impairment. May cause photosensitivity and patients should use skin protection, avoid prolonged exposure to sunlight and advised not use tanning equipment. A few cases of pregnancy have been attributed to the use of tetracycline antibiotics with oral contraceptives. Patients taking contraceptives containing oestrogen should be warned that there is a possibility of contraceptive failure and advised to use alternative forms of contraception during treatment. Use with caution in patients with SLE or myasthenia gravis as tetracyclines may exacerbate these conditions.

Pregnancy and Lactation

Pregnancy risk category D: contraindicated in pregnancy. Animal studies have shown that tetracyclines cross the placenta and can cause toxicity to the foetus. Yellow-brown discolouration of the teeth and enamel hypoplasia can occur when drugs of the tetracycline family are administered after the first trimester of pregnancy. Tetracyclines are excreted into breast milk and therefore contraindicated in nursing mothers.

Interactions

Antacids and preparations containing aluminium, calcium, magnesium, zinc, bismuth or iron may decrease the absorption of tetracycline. Tetracyclines decrease plasma prothrombin activity and a dose reduction in patients taking anticoagulants may be necessary. Tetracyclines may reduce the effect of oral contraceptives (see cautions).

Ocular Side Effects

Blurred vision

Field loss

Diplopia

Discoloration of the conjunctiva and lacrimal secretions

Ocular Side Effects-Notes

Ocular side effects are rare. Visual disturbance (blurred vision, field loss, diplopia) has been reported in association with benign intracranial hypertension.

General Side Effects

Gastrointestinal disturbances e.g. nausea, vomiting and diarrhoea

Discolouration of teeth and enamel hyoplasia (young children)

Abnormal bone growth (young children)

Headache

Photosensitivity

Benign intracranial hypertension

General Side effects-Notes

Gastrointestinal disturbances are commonly reported. The presence of headaches and visual disturbance may indicate benign intracranial hypertension (discontinue treatment).

Dose

For blepharitis and ocular rosacea: treatment may need to be continued for several weeks or months.

Adults: 2 x 250mg tablets twice daily.

Contraindicated in children.

Storage

Store below 25ºC.

Tropicamide Hydrochloride

Legal Classification

POM: For use and supply by all optometrists.

Available Preparations

Mydriacyl: eye drops, 0.5% tropicamide hydrochloride (Alcon)

Mydriacyl: eye drops, 1.0% tropicamide hydrochloride (Alcon)

Single Use (Preservative-free):

Minims Tropicamide: 0.5% tropicamide hydrochloride eye drops (Bausch & Lomb)

Minims Tropicamide: 1.0% tropicamide hydrochloride eye drops (Bausch & Lomb)

Combination product (POM):

Mydrisert: ophthalmic insert for pre-operative mydriasis, 0.28mg tropicamide, 5.4mg phenylephrine (Spectrum Thea)

Drug Type

Mydriatic and cycloplegic.

Classification

Anti-muscarinic.

Indications

Mydriasis (short duration) and cycloplegic refraction (in patients in late teens or older).

Contraindications

Hypersensitivity to tropicamide or any component of the preparation. Contraindicated in patients with confirmed or suspected angle closure as an acute attack may be precipitated. Multidose preparations contain benzalkonium chloride and should not be used where soft contact lenses are worn.

Cautions

Should be used with caution in very young children (particularly neonates) (use 0.5% strength).

Because of the risk of precipitating angle-closure in the elderly and others prone to raised intraocular pressure, an estimate of the depth of the angle of the anterior chamber should be made before use. Darkly pigmented irises are more resistant to pupillary dilation and caution should be exercised to avoid overdosage.

Patients should not drive for at least 2 hours following the instillation of tropicamide.

Pregnancy and Lactation

Pregnancy risk category C. There is insufficient evidence as to the safety of tropicamide in pregnancy or lactation. Tropicamide should be used during pregnancy only when it is considered essential by the clinician.

Interactions

The effect of anti-muscarinic agents may be enhanced by the concomitant administration of other drugs with anti-muscarinic properties such as amantadine, some anti-histamines, butyrophenones, phenothiazines and tricyclic anti-depressants.

In the case of concomitant use of another topical eye preparation, allow 5-10 minutes between applications of each preparation.

Ocular Side Effects

Transient stinging

Transient blurring

Photophobia

Raised intra-ocular pressure

Ocular Side Effects-Notes

Local irritation, hyperaemia, oedema and conjunctivitis may occur following prolonged administration.

General Side Effects

CNS disturbances

Dry mouth

General Side effects-Notes

Theoretical risk of systemic anticholinergic effects. CNS disturbances have been reported in children. Side effects more common in children with blonde hair and blue eyes.

Dose

Adults & children (3 months and over).

Mydriasis: 1 drop followed by a second drop after an interval of 5 minutes. A further drop may be instilled after 30 minutes, if required.

Cycloplegic refraction: 1 drop (1%) followed by a second drop after an interval of 5 minutes.

Storage

Store below 25ºC. *Mydriacyl* stored 2-8ºC. Protect from light.