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Department:
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SOUTH AFRICAN PRIMARY HEALTHCARE LEVEL ESSENTIAL MEDICINES LIST
CHAPTER 18: EYE CONDITIONS
NEMLC RECOMMENDATIONS FOR MEDICINE AMENDMENTS (2016 -2018)

Medicine amendment recommendations, with supporting evidence and rationale are listed below. Kindly review the medicine amendments in the context of the eye chapter.

SECTION	MEDICINE ADDED	ADDED/DELETED/AMENDED/NOT ADDED
18.1.1 Conjunctivitis, allergic		
- Adults and children > 6 years of age	Oxymetazoline 0.025%, eye drops	Retained (short term therapy)
	Sodium cromoglycate, 2 % eye drops	Retained
	Cetirizine, oral	Retained
- Children: 2–6 years of age	Chlorphenamine, oral	Retained (short term therapy)
	Sodium cromoglycate, 2 % eye drops	Retained for long-term treatment
	Cetirizine, oral	Retained as short term therapy
18.2 Corneal ulcer	Chloramphenicol 1% ophthalmic ointment	Added
18.3.2 Eye injury/Foreign bodies	Tetracaine 1% eye drops	Added
	Eye patching	Not added
	Tetanus vaccination	Not added
	Fluoroquinolone eye drops	Not added

18.1.1 CONJUNCTIVITIS, ALLERGIC

Adults and children > 6 years of age
Oxymetazoline 0.025%, eye drops: *retained (short term therapy)*
Sodium cromoglycate, 2 % eye drops: *retained*
Cetirizine, oral: *retained*

Children: 2–6 years of age
Chlorphenamine, oral: *retained (short term therapy)*
Sodium cromoglycate, 2 % eye drops: *retained*
Cetirizine, oral: *retained*

Note: Text of the STG was merely amended for clarity purposes.
From:

Adults and children > 6 years of age
- Oxymetazoline 0.025%, eye drops, instil 1–2 drops 6 hourly for a maximum of 7 days.

If no response within 7 days:
- Sodium cromoglycate, 2 % eye drops, instil 1 drop 6 hourly (Doctor initiated).
  - Use may be seasonal (1–3 months) or long term.

Children: 2–6 years of age
- Chlorphenamine, oral, 0.1 mg/kg/dose 6–8 hourly. See dosing table, pg 22.3.

If no response within 7 days:
- Sodium cromoglycate, 2 % eye drops, instil 1 drop 6 hourly (Doctor initiated).
  - Use may be seasonal (1–3 months) or long term.

Persistent allergic conjunctivitis in adults and children >2 years:
For long term use:
Children: 2–6 years of age
Cetirizine, oral, 5 mg once daily. See dosing table, pg 22.2.
- Use may be seasonal (1–3 months) or long term.

Children > 6 years of age and adults
Cetirizine, oral, 10 mg once daily.
- Use may be seasonal (1–3 months) or long term.

To:

Adults and children > 6 years of age

- Oxymetazoline 0.025%, eye drops, instil 1–2 drops 6 hourly for a maximum of 7 days.

If no response within 7 days or history of recurrent (seasonal)/chronic allergic conjunctivitis, change to:

- Sodium cromoglycate, 2 % eye drops, instil 1 drop 6 hourly (Doctor initiated).
  - Use may be seasonal (1–3 months) or long term.

If symptoms not controlled, change to cetirizine/chlorphenamine:

- Cetirizine, oral, 10 mg once daily.
  - Use may be seasonal (1–3 months) or long term.

Children: 2–6 years of age

- Chlorphenamine, oral, 0.1 mg/kg/dose 6–8 hourly. See dosing table, pg22.3.

If no response within 7 days or history of recurrent (seasonal)/chronic allergic conjunctivitis, change to:

- Sodium cromoglycate, 2 % eye drops, instil 1 drop 6 hourly (Doctor initiated).
  - Use may be seasonal (1–3 months) or long term.

If symptoms not controlled, change to cetirizine:

Cetirizine, oral, 5 mg once daily. See dosing table, pg 22.2.

- Use may be seasonal (1–3 months) or long term.

Sodium cromoglycate, 2% eye drops:

An external commentator queried why the treatment for chronic conjunctivitis did not include sodium cromoglycate. Thus, the STG layout was amended to make it clearer that oxymetazoline is for short-term use only, and that sodium cromoglycate should be used if longer term treatment is necessary[1].

The PHC EML ERC was of the opinion that it was not appropriate for patients with a history of chronic allergic conjunctivitis to have to return to the primary care facility after 7 days to receive long term treatment, and the option of sodium cromoglycate as initial treatment was recommended for these patients.

A PHC EML ERC member queried whether sodium cromoglycate could not be used for both short and long term use in all patients.[2] (Sodium cromoglycate is more expensive than oxymetazoline.)[3]

Recommendation: The PHC Committee recommends that treatment recommendations remain as stated above; but that further investigation be done (possibly into artificial tears) in the next review cycle.

18.2 CORNEAL ULCER

The following new STG was recommended for inclusion to the chapter, as corneal ulcer is a common condition and is minimally referred to under painful red eye, without recommended medicine management.

[1] Castillo M, Scott NW, Mustafa MZ, Mustafa MS, Azuara-Blanco A. Topical antihistamines and mast cell stabilisers for treating seasonal and perennial allergic conjunctivitis. Cochrane Database Syst Rev. 2015 Jun 1;(6):CD009566. https://www.ncbi.nlm.nih.gov/pubmed/26028608. [Authors of recent Cochrane review found insufficient evidence of superiority between topical antihistamines and mast cell stabilisers in reducing symptoms of seasonal and
perennial allergic conjunctivitis; low quality evidence]

[2] Figus M, Fogagnolo P, Lazzeri S, Capizzi F, Romagnoli M, Canovetti A, Iester M, Ferreras A, Rossetti L, Nardi M. Treatment of allergic conjunctivitis: results of a 1-month, single-masked randomized study. Eur J Ophthalmol. 2010 Sep-Oct;20(5):811-8. https://www.ncbi.nlm.nih.gov/pubmed/20383847 [RCT[2] comparing topical preparations for treatment of allergic conjunctivitis suggests that cromoglycate and the antazoline may be comparable in improving symptoms, but there was a higher mean discomfort score with antazoline. The authors suggest that artificial tears may also be beneficial]

[3] - Oxymetazoline 0.025% eye drops: Contract circular HP07-2017DA - weighted average price = R10.95/15 mL.
- Sodium cromoglycate 2% eye drops: SEP database 22 Dec 2017 – weighted average price = R 48.19/unit

18.2 Corneal ulcer

Description
Corneal ulcers may be caused by an infection**,** a foreign body in the eye, abrasions on the eye surface, severely dry eye or wearing contact lenses that are left in overnight.
Presents with:
» Blurring of vision.
» Photophobia.
» Very painful and watery eye.
» White patch/es on the cornea.
» Inflamed conjunctiva.

Herpes virus causes a branching (dendritic) ulcer which can recur and relapse over the lifetime of an individual.

General measures
» Establish the cause, to determine likelihood of a foreign body.
» Remove anyforeign body if visible on sclera or conjunctivae with cotton bud.
» Stain with fluorescein to reveal corneal foreign body or conditions such as abrasion or dendritic ulcer.
» Cover injured eye with eye pad, provided there is no pressure on the eye.

Medicine treatment
If referral is deferred and a culture cannot be done within 12 hours:
- Chloramphenicol 1%, ophthalmic ointment applied 6 hourly.

Referral
Urgent within 12 hours
All patients.

Chloramphenicol: The WHO Guidelines for the Management of Superficial Corneal trauma and Infections in Primary Health facilities, 2004[4] recommends treatment with chloramphenicol eye ointment (0.5-1%) three times per day for at least three days and referral to nearest eye care facility without delay.

A concern was raised that chloramphenicol would cause problems with future diagnosis. However, a technical medicine review would be required to determine whether treatment outcomes with fluoroquinolones would be altered with or without pre-referral administration of chloramphenicol, prior to referral[5].

Recommendation: Chloramphenicol 1% eye ointment be recommended for administration to corneal ulcer, prior to referral.
Rationale: Aligned with World Health Organisation Guidelines.
(*Note:* The PHC Expert Review Committee (ERC) recommends that NEMLC approve the chapter for external comment. The ERC would review available evidence, in the background, to determine if pre-referral chloramphenicol 1% eye ointment would negatively impact the clinical course of corneal ulcers when treated thereafter with fluoroquinolone ophthalmic drops).
Level of Evidence: III Guidelines

[4] WHO Guidelines for the Management of Corneal Ulcer at Primary, Secondary and Tertiary Care Health Facilities in the South-East Asia Region, 2004. http://apps.searo.who.int/pds_docs/B3516.pdf
[5] Bhadange Y, Das S, Kasav MK, Sahu SK, Sharma S. Comparison of culture-negative and culture-positive microbial keratitis: cause of culture negativity, clinical features and final outcome. Br J Ophthalmol. 2015 Nov;99(11):1498-502.

18.3.2 EYE INJURY /FOREIGN BODIES

The following STG was recommended for inclusion to the chapter, as specific guidance on eye injury caused by foreign bodies is not provided for in the PHC STGs.

18.3.2 Eye injury/foreign bodies

Many foreign objects that enter the conjunctiva are the result of mishaps that occur during everyday activities e.g. eyelashes, dust, dirt, sand.
Foreign objects that enter the eye at high rate of speed pose the highest risk of injury and may embed in the eye especially the cornea, or may penetrate into the eyeball. This often follows welding, grinding or hammering metal without wearing a protective eye visor or spectacles.

Description

» Disturbance of vision
» Complaints of foreign body in the eye that may not be visible
» Pain and lacrimation
» Metallic foreign body embedded in the cornea appears as a cloudy spot with a dark speck (the metal splinter) in the centre.

General measures

» If the foreign body is not embedded, irrigate eye with clean water or sodium chloride 0.9%.
» Remove any foreign body if visible on sclera or conjunctivae with moist cotton bud.
» Stain with fluorescein to reveal corneal foreign body if it is not obvious.
» Consider X-ray of orbit to exclude intra-ocular metallic foreign body.

Medicine treatment
Local anaesthetic if needed:

- Tetracaine1% eye drops, instil 1 drop in the affected eye(s), before removal of the foreign body.
  - Apply an eye shield until the anaesthetic effect wears off.
  - Never give anaesthetic drops to the patient to take home.

Referral

» Any embedded or penetrating foreign body.
» Failure to remove a visible foreign body.
» Suspected intraocular foreign body.

Eye patching: *not added*

Authors of a systematic review[6] concluded that "*treating simple corneal abrasions with a patch may not improve healing or reduce pain. It must be noted that, in these trials, participants who did not receive a patch were more likely to receive additional treatment, for example with antibiotics. Overall we judged the certainty of evidence to be moderate to low.*"

The evidence suggests that people receiving a patch may:

- be less likely to have a healed corneal abrasion after 24 hours compared to those not receiving a patch (RR 0.89, 95% CI 0.79 to 1.00, 7 trials, 531 participants, low certainty evidence);
- be similar to no-patch groups for healing by 48 hours (RR 0.97, 95% CI 0.91 to 1.02, 6 trials, 497 participants, moderate certainty evidence) and 72 hours (RR 1.01, 95% CI 0.97 to 1.05, 4 trials, 430 participants, moderate certainty evidence);
- have slightly longer healing time, but the difference was small and probably unimportant (MD 0.14 days longer, 95% CI 0 to 0.27 days longer, 6 trials, 642 participants, moderate certainty evidence).
- have more pain at 24 hours (low certainty evidence).

Recommendation: A shield rather than patching be applied as a protective measure and to avoid applying pressure to the eye.

[6] Lim CH, Turner A, Lim BX. Patching for corneal abrasion. Cochrane Database Syst Rev. 2016 Jul 26;7:CD004764.

Tetanus vaccination: *not added*
The necessity to administer a tetanus vaccine was discussed. However, the Committee was of the opinion that it was not urgent to administer the vaccine at primary level of care, and this could be done at secondary level of care as all cases require referral.

Fluoroquinolone eye drops: *not added*
Patient with contact lenses: Although contact lens wearers are treated with alternate fluoroquinolone antibiotic topical therapy; the PHC ERC was of the opinion that this was not relevant to the public sector primary healthcare level setting.