PAEDIATRIC HOSPITAL LEVEL STANDARD TREATMENT GUIDELINES AND ESSENTIAL MEDICINES LIST
CHAPTER 16: EYE CONDITIONS
NEMLC 9 DECEMBER 2021

<u>MEDICINE AMENDMENTS POST EXTERNAL COMMENT</u>

SECTION	MEDICINE	ADDED/DELETED/NOT ADDED
16.1 Eye infection, complicated (severe eye infection)		
Medicine Treatment	Gentamicin, ophthalmic drops	Deleted
	Tobramycin, ophthalmic drops	Added
	Tobramycin 0.3%, ophthalmic ointment	Added
16.3 Herpes Keratitis and Conjunctivitis		
Medicine Treatment	Aciclovir, oral	Added
	Cyclopentolate, ophthalmic drops	Deleted
	Atropine, ophthalmic drops	Added
16.5 Chemical burn to the eye		
Medicine Treatment	Amethocaine	Deleted
	Oxybuprocaine	Added
16.7 Non-penetrating eye injury		
Medicine Treatment	Amethocaine	Deleted
	Oxybuprocaine	Added
	Cyclopentolate, ophthalmic drops	Deleted
	Atropine, ophthalmic drops	Added

16.1. Eye infection, complicated (severe eye infection)

<u>Medicine Treatment</u>
An external comment was received highlighting the non-availability of gentamicin eye drops and proposing the addition of ciprofloxacin in the place of this agent. The lack of availability was acknowledged however it was argued that another aminoglycoside should be added instead. Thus, it was agreed that tobramycin replace gentamicin and the order be retained with chloramphenicol eye drops. It was recommended that the same approach be taken for the ointments, with which the Committee agreed.

The text was amended as follows:

During the day:
- ~~Gentamicin~~ <u>Tobramycin</u>, ophthalmic drops, instil~~l~~ 1 drop 4–6 hourly.

OR
- Chloramphenicol 0.5%, ophthalmic drops, instil~~l~~ 1 drop 4–6 hourly.

AND

Apply at night:
- Tobramycin 0.3%, ophthalmic ointment.

OR
- Chloramphenicol 1%, ophthalmic ointment.

Referral

A text change was recommended in an external comment which was accepted by the Committee.

The text was amended as follows:

To ophthalmologist within 24 hours if associated with any of the following acute signs:
» Reduced vision.

16.3 Herpes Keratitis and Conjunctivitis

Medicine Treatment

It was proposed that oral aciclovir be added in addition to the ointment. There is a systematic review supporting the inclusion[1] and appropriate dose for children[2] (page 28 of article).

A further comment proposed replacing the anticholinergic (cyclopentolate) with atropine for ciliary spasm and to adjust the frequency from 8 to 12 hourly. This was discussed by the Committee. It was asserted that atropine has a very long duration of action in terms of both mydriasis and cycloplegia when instilled into the eye. Furthermore, dosing in different age groups and individuals with blue eyes is more complex. It was asserted that atropine is preferred due the longer duration of action and powerful cycloplegic effect to reduce ciliary spasm. The amendment was thus agreed upon by the Committee.

The text was amended as follows:

MEDICINE TREATMENT
- Aciclovir, ophthalmic ointment, applied five times per day for 10 days.

OR
- Aciclovir orally, 20mg/kg five times per day for 10 days.

If painful cil~~l~~iary spasm present:
- Atropine ~~Cyclopentolate~~ ophthalmic drops, instil 1 drop ~~8~~12 hourly.

16.5 Chemical Burn to the Eye

[1] Wilhelmus K. R. (2015). Antiviral treatment and other therapeutic interventions for herpes simplex virus epithelial keratitis. The Cochrane database of systematic reviews, 1, CD002898. https://doi.org/10.1002/14651858.CD002898.pub5

[2] White ML, Chodosh J. Herpes Simplex Virus Keratitis: A Treatment Guideline. Hoskins Center for Quality Eye Care and American Academy of Ophthalmology Website; 2014. Available at: https://www.aao.org/clinical-statement/herpes-simplex-virus-keratitis-treatment-guideline.

Medicine Treatment

It was recommended in an external comment that the class example of the topical anaesthetic stated in the section be replaced with oxybuprocaine, the agent currently on tender. The Paediatric Hospital Level Expert Review Committee agreed to the amendment.

The text was amended as follows:

Anaesthetise eye/s after rinsing the eye and before instilling fluorescein

- Topical anaesthetic, e.g. ~~Amethocaine~~ Oxybuprocaine ophthalmic drops, instil 1 drop. Repeat every 15 minutes, if necessary.

16.6 Penetrating Eye Injury With/Without a Foreign Body

General and Supportive Measures

A text change was recommended in an external comment which was accepted by the Paediatric Hospital Level Expert Review Committee.

The text was amended as follows:

Note:

Use only preservative-free sterile eye drops if there is a possibility of an open eye injury. Do not apply ointment.

16.7 Non-penetrating eye injury

Diagnostic Criteria

A text change was recommended in an external comment which was accepted by the Paediatric Hospital Level Expert Review Committee.

The text was amended as follows:

Choroidal injury

» Choroidal break: blood or sclera visible under the retina.

Medicine Treatment

There was a proposal to change class example for the topical anaesthetic for corneal injury as above for 16.5 (Chemical Burn to the Eye), and the Paediatric Hospital Level Expert Review Committee was in agreement. A proposal by the external commenter to replace the anticholinergic (cyclopentolate) with atropine for iris spasm and to adjust the frequency from 8 to 12 hourly was discussed by the Committee. It was agreed to align with the decision above for ciliary spasm (see 16.3 Herpes Keratitis and Conjunctivitis) and amend accordingly.

The text was amended as follows:

MEDICINE TREATMENT

Corneal injury

A superficial corneal foreign body may be removed with a bud or hypodermic needle. To anaesthetise the cornea for removal of foreign body:

- Topical anaesthetic:
- E.g. ~~Amethocaine~~ Oxybuprocaine ophthalmic drops, instil 1 drop. Repeat every 15 minutes, if necessary.

To relieve discomfort caused by iris spasm:
- ~~Cyclopentolate~~ Atropine 0.5–1%, ophthalmic drops, 1 drop instilled immediately. 12 hourly u~~U~~ntil epithelialisation is complete.~~:~~
- Chloramphenicol, ophthalmic ointment, applied 8 hourly for 5–10 days.

A text change to explain the meaning of hyphaema was recommended in an external comment which was accepted by the Committee.

The text was amended as follows:

Iris injury Sphincter rupture Manage conservatively. Follow-up in four days to exclude hyphaema. Hyphaema (blood behind cornea)

16.8 Retinopathy of prematurity (ROP)

Timing of Screening

A text change was recommended in an external comment which was accepted by the Paediatric Hospital Level Expert Review Committee.

The text was amended as follows:

» Screening should be done at: 4-6 weeks' chronological age or 31-33 weeks' post ~~conceptional~~ conception age (whichever comes later).

16.10 Leu~~c~~kocoria

It was proposed that the spelling of leucocoria be corrected to leukocoria which was accepted by the Paediatric Hospital Level Expert Review Committee.

The text was amended as follows:

16.10 LEU~~C~~KOCORIA DESCRIPTION Common causes of leuk~~c~~ocoria (white pupil) include:

EXTERNAL COMMENTS

No external comments were received for the chapter

MEDICINE AMENDMENTS

No medicine amendments were made to the chapter.

SECTION	MEDICINE	ADDED/DELETED/NOT ADDED
16.1 Eye infection, complicated (severe eye infection)		
Medicine Treatment	Chloramphenicol drops	Retained
16.4 Cytomegalovirus (CMV) Retinitis		
Medicine Treatment	Valganciclovir	Not added

16.1. Eye infection, complicated (severe eye infection)

Chloramphenicol drops: *Retained*

It was noted by the Paediatric Hospital Level Expert Review Committee (ERC) that there were concerns raised in the United Kingdom (UK) regarding safety of products containing boron or boric acid such as chloramphenicol drops for children aged 0 to 2 years. This has been recently reviewed by the Medicines & Healthcare products Regulatory Agency in the UK and it was concluded that the products can be safely administered to this age group[3]. Furthermore, there are no safety concerns highlighted in the South African Medicines Formulary and the British National Formulary. Thus chloramphenicol drops has been retained throughout the book.

16.2. Conjunctivitis

Access to sodium cromoglycate for allergic conjunctivitis was noted by the Paediatric Hospital Level ERC however the conjunctivitis section is covered under the Primary Healthcare Level Standard Treatment Guidelines (STGs) and Essential Medicines List (EML) (cross-referenced in Paediatric Hospital Level STGs and EML) and, has already been updated for the current cycle.

16.4 Cytomegalovirus (CMV) retinitis

[3] https://www.gov.uk/drug-safety-update/chloramphenicol-eye-drops-containing-borax-or-boric-acid-buffers-use-in-children-younger-than-2-years

Valganciclovir: *not added*

The inclusion of oral valganciclovir as an alternative to intravitreal ganciclovir was discussed by the Paediatric Hospital Level ERC for the initial treatment of limited retinitis. However, it was agreed that evidence for oral valganciclovir in children for CMV is insufficient.

16.7 Non-penetrating eye injury

Medicine Treatment

Iris Injury

Hyphaema

The text was amended as follows:

PLUS Topical corticosteroid drops: • Dexamethasone, ophthalmic drops, instil one drop 4 hourly for 5 days.

16.8 Retinopathy of prematurity (ROP)

Description

Timing of Screening

The text was amended as follows (grammatical change):

» Screening should be done at: 4-6 weeks' chronological age or 31-33 weeks' post conceptional age (whichever comes later).

Referral

The text was amended as follows (grammatical change):

» All neonates weighing less than 1 250 g OR ≤30 weeks' gestational age OR those 1250g - 1500g with high risk for ROP (on prolonged oxygen) should be screened for ROP by ophthalmological examination.