



# Test your knowledge and understanding

This page is designed to help you test your own understanding of the concepts covered in this issue, and to reflect on what you have learnt. We hope that you will also discuss the questions with your colleagues and other members of the eye care team, perhaps in a journal club. To complete the activities online – and get instant feedback – please visit [www.cehjournal.org](http://www.cehjournal.org)

<b>1. What measures would help prevent or reduce sight loss from microbial keratitis?</b>		<b>Select all that apply</b>
a	Prophylactic treatment of simple corneal abrasions with chloramphenicol eye ointment	<input type="checkbox"/>
b	Rapid referral from primary health care facilities to regional eye units	<input type="checkbox"/>
c	Use of protective goggles in work situations where eyes might be injured	<input type="checkbox"/>
d	Improved awareness of microbial keratitis among primary health workers	<input type="checkbox"/>
e	Reliable availability of appropriate antibacterial and antifungal eye drops	<input type="checkbox"/>
<b>2. To make a diagnosis of microbial keratitis it is necessary to have a slit lamp. True or False?</b>		<b>Select one</b>
a	True	<input type="checkbox"/>
b	False	<input type="checkbox"/>
<b>3. Which of the following are helpful in identifying the type of organism causing microbial keratitis infection?</b>		<b>Select all that apply</b>
a	Gram stain of scrape slide	<input type="checkbox"/>
b	Presence or absence of a hypopyon	<input type="checkbox"/>
c	Presence or absence of serrated/feathery edges to the corneal infiltrate	<input type="checkbox"/>
d	Potassium hydroxide stain of corneal scrape slide	<input type="checkbox"/>
e	Presence or absence of raised slough on the cornea surface	<input type="checkbox"/>
<b>4. Antimicrobial treatments work equally well in different settings . True or False?</b>		<b>Select one</b>
a	True	<input type="checkbox"/>
b	False	<input type="checkbox"/>

## ANSWERS

**1.** All of these measures are likely to be helpful. The prevention of sight loss from microbial keratitis requires action at different stages: to prevent microbial keratitis, recognise it, refer patients rapidly and treat them effectively.

**2. FALSE.** A slit lamp certainly helps in the assessment of microbial keratitis; however, many of the signs can be detected using a torch (with or without a blue filter), a pair of magnifying loupes and some fluorescence for corneal staining. It is therefore realistic to train and equip health workers to identify cases of microbial keratitis in a primary care setting.

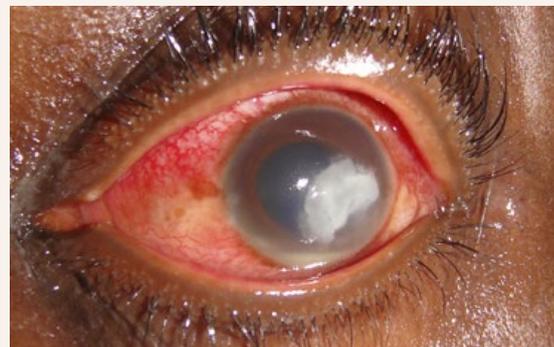
**3. a, c, d and e** are helpful indicators of the cause. Both feathery infiltrate edges and raised corneal slough are more common in fungal microbial keratitis (see pages 6–7). Microscopy of slides or corneal scrapes can be very helpful in providing a rapid diagnosis (see pages 8–9).

**4. FALSE.** The pattern of organisms that cause infections and their sensitivity to antibacterial or antifungal agents can vary significantly between regions. Therefore, it is very important to have an understanding of the typical causative organisms in different regions and their usual antibiotic sensitivity profile to guide treatment, particularly if microbiology services are generally limited.

## Reflective learning

Visit [www.cehjournal.org](http://www.cehjournal.org) to complete the online 'Time to reflect' section.

## Picture quiz



Matthew Burton

A 35-year-old man in an equatorial African country presents with a two-week history of gradually progressive pain, redness and reduced vision (6/60) in the left eye. The problem began after the left eye was scratched by a maize leaf while he was harvesting. The right eye is not affected.

**1.** What is the most likely diagnosis?

- a. Chronic uveitis
- b. Herpes simplex viral keratitis
- c. Microbial keratitis (possibly fungal)
- d. Traumatic abrasion
- e. Corneal scar

**2.** What clinical signs are present?

- a. Conjunctival injection
- b. Hypopyon
- c. Corneal perforation
- d. Corneal slough
- e. Trichiasis

**3.** What treatments might be useful in managing this condition?

- a. Atropine eye drops
- b. Acyclovir eye ointment
- c. Oral anti-fungal medication
- d. Natamycin 5% eye drops
- e. Topical or sub-conjunctival antibiotics

## ANSWERS

**1. c.** On microscopy this was diagnosed as a case of filamentary fungal microbial keratitis. There was a history consistent with traumatic corneal abrasion with vegetable matter (maize leaf), which is a likely source of fungal infection. The history of a sub-acute course is also consistent with a fungal infection. By contrast, significant bacterial microbial keratitis tends to have a more rapid or acute course. The signs are most consistent with a fungal infection (see next answer).

**2. a, b and d.** This eye has signs of active inflammation. The eye is red (conjunctival injection). There is a large white area of inflammatory infiltrate in the cornea that on examination has a slightly raised profile, with an irregular or feathery superior and nasal edge and there are signs of intraocular inflammation, with a small hypopyon (pus collection in the anterior chamber).

**3. a, c, d and e.** Management of fungal microbial keratitis involves intensive treatment with topical antifungal drops, of which natamycin 5% appears to be the most effective for filamentary fungi. If there is deep corneal or intraocular involvement, oral antifungal medication may be a useful addition to topical treatment. If one does not have a confirmed laboratory diagnosis of a fungal aetiology, then it is also advisable to treat with broad-spectrum topical or sub-conjunctival antibiotics. Pupil dilation with atropine will help reduce pain and the risk of adhesions between the iris and lens.