Management of patients with chronic open angle glaucoma


Abstract
Glaucoma refers to a group of conditions that can cause sight loss as a result of damage to the optic nerve head. Glaucoma can affect a person’s life in many ways. Healthcare professionals have an important role in educating and supporting patients to manage their condition and adhere to their glaucoma management regimens. Since patients with glaucoma may have additional health conditions, healthcare professionals should have an understanding of glaucoma and the importance of continuing treatment, so that they can facilitate care effectively.

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Keywords
chronic open angle glaucoma, concordance, eye health, glaucoma, patient education, sight loss

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Aims and intended learning outcomes
The aim of this article is to discuss the care of patients with chronic open angle glaucoma and to explore the effects the condition may have on their quality of life. This article also aims to discuss the problem of non-concordance with glaucoma medication, and to clarify the role of healthcare professionals in promoting concordance. After reading this article and completing the time out activities you should be able to:

- Define chronic open angle glaucoma and provide an overview of the treatment options.
- Explore the physical effects of glaucoma and the effect it can have on a patient’s life.
- Outline the factors that may influence patients’ concordance with their glaucoma management regimen.
- Discuss how healthcare professionals can help to improve concordance with glaucoma management through support and education.

Introduction
Glaucoma refers to a group of conditions that have the potential to cause sight loss. The loss of visual field results from damage to the optic nerve head, which can be, but is not always, the result of raised intraocular pressure (Shaw et al 2010). The word glaucoma comes from the Greek ‘glaucos’, which means clouded or blue-green hue (Halvorson 2005), possibly a result of a misinterpreted observation of cataracts in ancient Greece (Adams and Hubbard 1999) or the apparent grey-green colour of an eye with acute closed angle glaucoma (Galloway et al 2006).

According to the International Glaucoma Association (2013a), about 2% of the population over the age of 40 have glaucoma, and an estimated 600,000 people in the UK have the condition. Approximately 10% of blindness registrations in the UK are attributed...
to glaucoma (National Institute for Health and Care Excellence (NICE) 2009), and it is estimated there are 12.5 million people worldwide whose blindness is caused by glaucoma (World Health Organization 2014).

Sight loss as a result of glaucoma cannot be restored, although blindness is generally avoidable with appropriate management of intraocular pressure (National Collaborating Centre for Acute Care 2009). Monitoring and managing the condition to minimise further damage is essential to maintain sight throughout the patient’s lifetime (NICE 2009), and nurses have an important role in providing support and education, as well as promoting concordance with management regimens.

**Complete time out activity 1**

### Mechanism of raised intraocular pressure

Aqueous humour is a fluid that circulates inside the front of the eye. It is similar in composition to plasma and is comprised of water (99%), sodium, potassium, chloride, bicarbonate and glucose (Shaw *et al.* 2010). Aqueous humour is produced by the ciliary body and flows from the posterior chamber through the pupil into the anterior chamber (Figure 1), providing nutrition for the lens and cornea, which are both avascular. A small amount of this fluid is produced continuously, and an equal amount drains away via the trabecular meshwork (a sieve-like structure at the angle between the iris and cornea) into the canal of Schlemm, where it enters the bloodstream in the back of the eye (Halvorson 2005). Figure 1 shows the site of aqueous production and drainage.

The cornea and sclera are fibrous and unyielding, so pressure in the eye is regulated by the balance of aqueous production and drainage rates (Galloway *et al.* 2006). The normal intraocular pressure is between 10 and 21mmHg (Sharts-Hopko and Glynn-Milley 2009), and it is usually highest in the early morning, and gradually decreases during the first part of the day. If the drainage angle becomes blocked or partially blocked, the aqueous humour cannot leave the eye at the same rate at which it is produced, and the intraocular pressure rises. If this raised pressure is not managed, it can cause the death of ganglion cell axons (the nerve cells that exit the eye in the optic nerve). In glaucoma, the initial damage is to the ganglion cells supplying the peripheral visual field, thereby damaging peripheral vision, which often goes unnoticed by the patient (Adams and Hubbard 1999). Preventing damage caused by glaucoma is best achieved by identifying the condition in the early stages. However, most people do not routinely see an eye specialist such as an optometrist unless they notice a problem (Gray 2005).

**Types of glaucoma**

This article focuses on chronic open angle glaucoma. Other types of glaucoma include normal tension or low tension glaucoma, primary acute angle closure glaucoma, secondary glaucoma and congenital glaucoma. Ocular hypertension is a significant risk factor for developing chronic open angle glaucoma (NICE 2009).  

### Ocular hypertension

Ocular hypertension is elevated intraocular pressure with no optic nerve head damage or visual field loss. For example, a person may have an intraocular pressure reading of 25mmHg without damage to the optic nerve head and no visual field loss. Progression to open angle glaucoma may never occur; however, ocular hypertension is a significant risk factor for developing chronic open angle glaucoma (NICE 2009), and approximately 1.5 million people in the UK are estimated to have this condition (NICE 2009). It is estimated there are 12.5 million people worldwide whose blindness is caused by glaucoma (World Health Organization 2014). Sight loss as a result of glaucoma cannot be restored, although blindness is generally avoidable with appropriate management of intraocular pressure (National Collaborating Centre for Acute Care 2009). Monitoring and managing the condition to minimise further damage is essential to maintain sight throughout the patient’s lifetime (NICE 2009), and nurses have an important role in providing support and education, as well as promoting concordance with management regimens.

**Complete time out activity 2**

1. What do you think are the functions of aqueous humour? Write down a list of these functions.

2. Consider your clinical environment from the point of view of a patient with sight loss. Is the signage clear and high contrast? Are corridors free from obstacles, and is the environment safe? Is information easily available in large print? Are there any changes you could make to improve the environment for visually impaired patients?

**FIGURE 1**

**Aqueous humour production and drainage**

![Diagram of aqueous humour production and drainage](image-url)
10% of patients with ocular hypertension will develop glaucoma over 10 years (Adams and Hubbard 1999). Lowering intraocular pressure can help to protect against developing chronic open angle glaucoma (NICE 2009). The National Collaborating Centre for Acute Care (2009) developed algorithms so that patients can be placed on an appropriate care pathway depending on their intraocular pressure, visual field results or optic nerve head damage. Care pathways have been defined for:

- Ocular hypertension and suspected chronic open angle glaucoma with high intraocular pressure.
- Suspected chronic open angle glaucoma with normal intraocular pressure.
- Chronic open angle glaucoma.

Treatment of ocular hypertension depends on the patient’s age, their risk of developing chronic open angle glaucoma, intraocular pressure readings and corneal thickness results. Corneal thickness is an important factor to consider in glaucoma management, because thin corneas can give artificially low intraocular pressure readings and thick corneas can give artificially high readings (Shaw et al 2010). Treatment options include prescribing prostaglandin or beta blocker drops, or monitoring the patient without treatment, depending on the care pathway used.

**Normal tension or low tension glaucoma**

This type of glaucoma presents similarly to chronic open angle glaucoma, except that the patient has a normal intraocular pressure. Patients vary in their susceptibility to a rise in pressure; some show marked damage with a small rise in intraocular pressure, even if the readings are still within the normal range and especially if the patient has a thin cornea potentially providing artificially low results. For example, an intraocular pressure reading of 18mmHg may be considered too high for a particular patient, although this is considered normal for the general population. The treatment for normal tension glaucoma is the same as for chronic open angle glaucoma.

**Primary acute angle closure glaucoma**

Patients who have a narrow drainage angle, a shallow anterior chamber or are hypermetropic are at increased risk of developing acute glaucoma. The pupil becomes blocked by the lens, preventing the flow of aqueous humour from the posterior chamber to the anterior chamber.

This pupil block often happens in the evening or at night when the pupil is mid-dilated in low light levels, since at this point the gap between iris and lens is narrowest. The subsequent rise in pressure from the pupil block pushes the iris forward, blocking the drainage angle and further increasing the intraocular pressure, which can rise to 50–100mmHg (Marsden 2008). Acute episodes are usually unilateral; however, the unaffected eye should also be observed, since this is potentially a bilateral condition.

The signs and symptoms of acute angle closure glaucoma are:

- Pain – both ocular pain and headache.
- Nausea and vomiting.
- Photophobia.
- Watery eye.
- Redness of the eye, especially around the margins of the cornea.
- Reduced vision.
- Pupil may be oval, non-reactive and semi-dilated.
- Cloudy cornea as a result of oedema.
- Shallow anterior chamber.

Before the acute episode, the patient may notice haloes around lights, particularly at night, resulting from corneal oedema. This may be accompanied by a headache. However, these symptoms usually resolve by the next morning.

Acute glaucoma is an ophthalmic emergency, because the dramatic rise in intraocular pressure can damage the optic nerve head and cause permanent loss of vision. Therefore, treatment should start as quickly as possible. Intravenous acetazolamide is administered to reduce the production of aqueous humour, and then oral acetazolamide can be started once vomiting has stopped. Pilocarpine eye drops are given to constrict the pupil once the pressure has been sufficiently lowered for the iris to be pulled away from the drainage angle. Corticosteroid drops are started to reduce inflammation in the anterior chamber, and beta blocker and alpha2-adrenoceptor agonist drops can be used to help to reduce the intraocular pressure. Analgesics are given as required, but often the pain subsides as the intraocular pressure decreases.

Laser peripheral iridotomy is used to prevent further acute episodes. This uses a YAG laser to make a small hole in the outer edge of the iris, which allows the aqueous humour to circulate from the posterior chamber to the anterior chamber. The unaffected eye is also treated prophylactically.
Secondary glaucoma
Underlying conditions or trauma can cause secondary open or closed angle glaucoma, such as:
- Uveitis – this inflammatory condition produces debris that can block the drainage angle. It can cause posterior synechiae, in which the posterior surface of the iris adheres to the anterior surface of the lens, resulting in pupil block. It can also cause peripheral anterior synechiae, in which the anterior outer edge of the iris adheres to the posterior surface of the cornea, blocking the drainage angle (Shaw et al 2010).
- The iris can be pushed forward by a tumour or an enlarged lens, obstructing the drainage angle (International Glaucoma Association 2014).
- Injury to the eye can cause damage to the drainage angle blocking aqueous humour outflow, or it can cause a hyphaema (bleeding into the anterior chamber), preventing aqueous humour drainage (International Glaucoma Association 2014).
- Phacomytic glaucoma is caused by a mature or hypermature cataract. Lens material leaks from the lens capsule and obstructs aqueous humour outflow, so cataract extraction is required (International Glaucoma Association 2014).

Congenital glaucoma
Congenital glaucoma is a rare condition which occurs when the aqueous humour drainage system does not develop properly, resulting in raised intraocular pressure (Adams and Hubbard 1999). The sclera is more elastic in infancy than in adulthood, so a rise in intraocular pressure can stretch the sclera, resulting in enlarged eyes. Surgery is generally required, either to open up the drainage angle or to perform a trabeculectomy.

Chronic open angle glaucoma
Chronic open angle glaucoma, also referred to as primary open angle glaucoma, affects 1-2% of people over 40 years and 17% of people over 70 years (Kanski 2007). It is also more prevalent in African-Caribbean populations. Chronic open angle glaucoma is often unnoticed in its early stages because of its gradually developing nature and initial lack of symptoms. It is usually a bilateral condition, with one eye often affected earlier and more severely than the other (Shaw et al 2010). The drainage angle between the iris and cornea is open, but the trabecular meshwork becomes blocked, leading to a rise in intraocular pressure (Watkinson 2010).
Rates of progression differ widely between patients (NICE 2009), and their susceptibility to pressure varies, with some patients experiencing significant disease with relatively minor rises in intraocular pressure (Adams and Hubbard 1999).
The signs of chronic open angle glaucoma are:
- Raised intraocular pressure, although chronic open angle glaucoma can occur without this.
- Loss of visual field. Typically the nasal peripheral field is affected first, followed by the rest of the peripheral field. The central vision is affected later.
- Cupped or enlarged optic nerve head (Figure 2). The optic cup is where the central retinal artery and vein enter and exit through the middle of the nerve fibres at the optic nerve head. The cup becomes larger in chronic open angle glaucoma as the nerve fibres are damaged (Figure 2). This is expressed as a ratio of cup to optic nerve head; a normal ratio is 0.3 and a glaucomatous ratio is 0.5-0.8 (Shaw et al 2010).
The risk of developing chronic open angle glaucoma is increased if a close family member has the condition (Royal National Institute for the Blind 2015). Watkinson (2009) advises that healthcare professionals should educate family members about the importance of regular sight tests every two to three years. In the UK, the NHS provides free sight tests for people aged over 40 if they have a parent, sibling, son or daughter with glaucoma.

FIGURE 2
Normal and cupped optic nerve head

Normal optic nerve head
Cupped or enlarged optic nerve head
**TIME OUT**

Describe how you would teach a patient to instil eye drops correctly. What aids do you know of that may help someone who is finding it difficult? What can the patient do to minimise systemic absorption of the eye drop? What would they do if more than one drop has to be instilled?

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**Treatment**

Treatment of chronic open angle glaucoma aims to prevent the disease progressing and causing further damage to the nerve cells; any sight loss that has already occurred is irreversible. The focus is on reduction of intraocular pressure, and a target level is set by the clinician. Treatment for glaucoma can involve topical medication (eye drops) to reduce the production of aqueous humour and/or improve the fluid drainage, laser treatment and surgery. **Complete time out activity 3**

**Glaucoma medications**

Glaucoma medications are prescribed to reduce the patient’s intraocular pressure to an optimum level. This helps to preserve optic nerve function and prevent sight loss. There are several groups of medications to reduce intraocular pressure, with varying modes of action. Table 1 shows the common medications used to treat chronic open angle glaucoma. The healthcare professional should be familiar with these when caring for patients with glaucoma.

Before eye drops are instilled, hands must be washed and the procedure explained to the patient. The instillation procedure is as follows (International Glaucoma Association 2015b):

- Ask the patient to look up. This moves the sensitive cornea away and helps with the patient’s comfort.
- Gently pull down the lower lid.
- Hold the bottle vertically without allowing it to touch the patient’s eye or eyelashes, to prevent transfer of bacteria to the bottle. Gently squeeze the bottle to let one drop fall into the lower lid (Figure 3).
- Encourage the patient to close their eye after the drop has been instilled.

The systemic side effects of the eye drops can be minimised by encouraging patients to...

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**TABLE 1**

<table>
<thead>
<tr>
<th>Medication used for glaucoma treatment</th>
<th>Examples</th>
<th>Action</th>
<th>Possible side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostaglandin analogues</td>
<td>Latanoprost.</td>
<td>Increase uveoscleral outflow.</td>
<td>Increased brown pigment in the iris.</td>
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<td></td>
<td>Travoprost.</td>
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<td>Increased thickening and growth of eyelashes.</td>
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<td></td>
<td>Bimatoprost.</td>
<td></td>
<td>Pigmentation of periocular skin.</td>
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<tr>
<td>Beta blocking agents (non-selective)</td>
<td>Timolol maleate.</td>
<td>Lower the production of aqueous humour by blocking the beta receptors in the ciliary body.</td>
<td>Bronchospasm and breathlessness.</td>
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<td>Betaxolol.</td>
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<td>Bradycardia.</td>
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<td></td>
<td>Carteolol.</td>
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<td>Hypotension.</td>
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<td>Levobunolol.</td>
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<td>Anaphylaxis.</td>
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<td>Dry eyes.</td>
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<td></td>
<td>Erythema.</td>
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<tr>
<td>Carbonic anhydrase inhibitors</td>
<td>Dorzolamide.</td>
<td>Decrease aqueous humour production by inhibiting carbonic anhydrase in the ciliary body.</td>
<td>Topical:</td>
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<tr>
<td></td>
<td>Brinzolamide.</td>
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<td>Stinging on instillation.</td>
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<td></td>
<td>Oral acetazolamide.</td>
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<td>Metallic taste.</td>
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<td>Systemic:</td>
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<td>Headache.</td>
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<td>Depression.</td>
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<td>Fatigue.</td>
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<td>Hypokalaemia.</td>
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<td>Skin rashes.</td>
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<td>Reduced appetite.</td>
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<td></td>
<td></td>
<td>Nausea.</td>
</tr>
<tr>
<td>Alpha-2-adrenoceptor agonists</td>
<td>Brimonidine.</td>
<td>Reduce aqueous humour secretion by the ciliary body and increase uveoscleral outflow.</td>
<td>Dry mouth.</td>
</tr>
<tr>
<td></td>
<td>Apraclonidine.</td>
<td></td>
<td>Fatigue.</td>
</tr>
<tr>
<td>Parasympathomimetics</td>
<td>Pilocarpine.</td>
<td>Increase aqueous outflow by contacting ciliary muscle to open the trabecular meshwork.</td>
<td>Small pupil.</td>
</tr>
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<td></td>
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<td></td>
<td>Myopia.</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>Headache.</td>
</tr>
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</table>

Once lost, sight cannot be regained.
Family members should be aware of their increased risk of developing glaucoma.
The importance of the person’s role in their treatment.
Different treatment options.
How to correctly instil eye drops, and how they should be stored.
The need for regular monitoring.
Details of support groups available.
Glaucoma can affect the patient’s quality of life in more ways than causing reduced vision (Lester and Zingirian 2002). It is important to recognise the psychological effects of receiving a diagnosis of glaucoma and anxiety relating to possible vision loss. The patient may also be concerned about family members, since there is a genetic link associated with glaucoma (National Collaborating Centre for Acute Care 2009). The side effects of treatments can be unpleasant (Table 1); and for people who are under the age of 60 and who are working, there is the burden of the cost of their prescriptions and the need to take time off work to attend regular clinic appointments. If vision is reduced, daily activities can become more challenging; driving ability could be affected and independence compromised. Healthcare professionals should recognise how glaucoma can affect the whole of a person’s life and ensure that appropriate support is available should it be required.

Patient information
Since chronic open angle glaucoma is a lifelong condition, receiving a diagnosis of glaucoma can cause anxiety and distress, even if the patient has good vision. An important part of the healthcare professional’s role in managing glaucoma is to ensure that the patient has sufficient and relevant information about the condition, as well as access to support (Gray 2005). Patient education can also help to increase concordance with treatment.

The National Collaborating Centre for Acute Care (2009) recommends that patients who receive a diagnosis of glaucoma should be provided with the following information:
- Details about their specific condition, the lifelong implications and the prognosis for retaining sight.
- Early glaucoma is often symptomless.
- Most people treated for chronic glaucoma will not go blind.
clinics have given nurses and other healthcare professionals the opportunity to develop their role to an advanced level. The Nursing and Midwifery Council (2015) states that nurses must assess and respond to the physical, social and psychological needs of their patients, and that care is provided in a partnership between nurse and patient. Nurses working in glaucoma clinics are well placed to provide this holistic support.

Complete time out activity

Treatment adherence and concordance

Lacey et al (2009) suggests that suboptimal concordance with glaucoma treatment is a contributing factor to glaucoma remaining the Western population’s third most common cause of blindness. This will continue unless healthcare professionals and patients take a joint approach to glaucoma management (Shaw et al 2010). The patient should feel that glaucoma care is ‘done with’ them rather than ‘done to’ them (Marsden 2014).

Several contributing factors to suboptimal concordance have been identified, such as intolerance of eye drops, forgetting doses, cost of prescriptions, inadequate advice about the importance of continuing treatment, difficulty in instilling eye drops, cognitive impairment, confusion about different types of eye drops and different frequencies of instillation, and perceived lack of effectiveness of treatment (Taylor et al 2002, Schwartz and Quigley 2009, Lacey et al 2009, Shaw et al 2010). Complete time out activity

Studies by Taylor et al (2002), Lacey et al (2009) and Wu et al (2010) found that patients were not given sufficient guidance on eye drop instillation. It is generally agreed that education of patients about their condition, the importance of adhering to their treatment, and the potential consequences of not adhering is necessary to improve concordance. Patient education should be repeated to maintain its effectiveness (Gray 2005). Providing written information (Sharts-Hopko and Glynn-Milley 2009) and discussing how the patient is managing with the eye drops at each clinic visit (Shaw et al 2010) can reinforce initial education and enable the patient to express any concerns. Waterman et al (2013) found that patients who were given individualised care and education were more adherent to their treatment. It is therefore important to discover patients’ understanding of glaucoma, and to tailor education and care to their individual needs.

Clear labelling or colour coding eye drops and using as few different drops as possible, can help patients to manage their treatment. Providing devices that help to open drop bottles or position the drops correctly over the eye can assist the patient to be as independent as possible.

In the case study in Box 1, the nurse should check Rosie’s understanding of her condition and explain the function of eye drops and why it is important to take them as prescribed. More information can be requested from Rosie about the irritation she experienced, to establish whether she is allergic to the drops or whether the irritation is a side effect. Medical staff in the clinic should be informed that Rosie has not taken her eye drops recently, and changing her medication should be considered to try to reduce the irritation caused by the treatment. Strategies could be suggested to help Rosie to remember to instil her eye drops, for example setting a daily alarm, using them in association with another daily activity such as brushing teeth, or keeping a chart and marking off when an eye drop has been instilled.

Complete time out activity

Conclusion

Glaucoma is lifelong, and many patients face challenges living with and managing its condition. It is therefore important to ensure that patients are fully informed about their condition, the treatment options available to them, and the importance of adhering to their treatment to prevent further deterioration.

BOX 1
Case study

Rosie is a 42-year-old retail manager with glaucoma. She lives with her partner and two children aged nine and 12. During an appointment in the outpatient clinic, it was found that her intraocular pressure remained high despite her prescribed medication – it was 35mmHg in her right eye and 38mmHg in her left eye. In addition, her visual fields in each eye showed evidence of progressive vision loss. On discussion with Rosie, the nurse in the clinic found that she had not picked up her repeat prescription because the drops irritated her eyes, causing redness, which she was conscious of at work. In addition, Rosie felt that her vision was fine, and therefore she thought she did not need to use the eye drops. She also had difficulty remembering to take her morning eye drop, because she was busy getting ready for work and ensuring that her children were leaving on time for school.
the condition. This article has provided an overview of the different types of glaucoma and their causes, symptoms and treatments. The role of the healthcare professional is to enable patients and their families to become better informed when managing their condition. Blindness from glaucoma generally results from neglect, and once sight has been lost through glaucoma it cannot be recovered. Early detection and prompt treatment are therefore important to prevent sight loss. 

Complete time out activity

References


Lacey J, Cate H, Broadway DC (2009) Barriers to adherence with glaucoma medications: a qualitative research study. Eye. 23, 4, 924-932.


Chronic open angle glaucoma

1. Glaucoma:
   a) Is a lifelong condition
   b) Always causes blindness
   c) Is temporary
   d) Is always bilateral

2. Glaucoma is a result of:
   a) Increased drainage of aqueous humour
   b) Damage to the optic nerve head
   c) Reduced intraocular pressure
   d) Hypotension

3. Aqueous humour is primarily composed of:
   a) Glucose
   b) Water
   c) Sodium
   d) Potassium

4. Which is not a type of glaucoma?
   a) Congenital glaucoma
   b) Primary acute angle closure glaucoma
   c) Chronic open angle glaucoma
   d) Left angle glaucoma

5. Which range is normal for intraocular pressure?
   a) 2-8mmHg
   b) 10-21mmHg
   c) 25-32mmHg
   d) 33-38mmHg

6. Which of the following is not a sign of chronic open angle glaucoma?
   a) Cupped or enlarged optic nerve head
   b) Loss of visual field
   c) Tachycardia
   d) Raised intraocular pressure

7. Treatment for chronic open angle glaucoma focuses on:
   a) Restoring sight loss
   b) Increasing intraocular pressure
   c) Reducing intraocular pressure
   d) Closing the trabecular meshwork

8. Which medications are used to treat glaucoma?
   a) Prostaglandin analogues
   b) Corticosteroids
   c) Antihistamines
   d) Non-steroidal anti-inflammatory drugs

9. Which factor may affect concordance with treatment for glaucoma?
   a) Cost of prescriptions
   b) Intolerance of eye drops
   c) Perceived lack of effectiveness of treatment
   d) All of the above

10. An effective strategy to improve concordance with treatment for glaucoma is:
    a) Ignoring patient concerns about their medication
    b) Using aggressive language
    c) Patient education
    d) Withholding guidance on eye drop instillation

This self-assessment questionnaire was compiled by Alex Bainbridge

The answers to this questionnaire will be published on May 25

The answers to SAQ 841 on neutropenic sepsis, which appeared in the April 27 issue, are:

How to use this assessment

This self-assessment questionnaire (SAQ) will help you to test your knowledge. Each week you will find ten multiple-choice questions that are broadly linked to the CPD article. Note: there is only one correct answer for each question.

- You could test your subject knowledge by attempting the questions before reading the article, and then go back over them to see if you would answer any differently.
- You might like to read the article to update yourself before attempting the questions.

When you have completed your self-assessment, add it to your professional portfolio. You can record the amount of time it has taken. Space has been provided for comments.

You might like to consider writing a reflective account, see page 62.

Report back

This activity has taken me _____ hours to complete.
Other comments:

Now that I have read this article and completed this assessment, I think my knowledge is:
Excellent
Good
Satisfactory
Unsatisfactory
Poor

As a result of this I intend to: