Two-minute guide to IK

The two-minute guide series is a quick reference guide to commonly encountered conditions, their symptoms, signs, cause and management by **Andrew Elder Smith**

Infiltrative keratitis (IK) is an indicator of a cornea responding to inflammatory stimuli. It is rarely seen in rigid gas-permeable lenses or daily disposable lenses. In its mildest form it is asymptomatic (AIK).

How do I see it?

With a slit lamp using a parallelepiped system, with moderate illumination (if too high, faint infiltrates can 'bleach out') and 16X magnification. Indirect or indirect retro-illumination gives best results. Turn the room light down to enhance contrast and view against a dark iris or the pupil. Infiltrates appear as small, pale grey, fuzzy-edged spots near Bowman's layer. There is no loss of corneal thickness. Instil fluorescein and check with blue light and a yellow barrier filter.

Symptoms

Generally mild.

- **AIK**
  - No symptoms reported
  - Close questioning may reveal mild discomfort, grittiness or redness. The wearer may not report these as they assume that the symptoms are normal for contact lenses. Check if these symptoms have changed or are normal for the wearer.
- **IK**
  - Mild discomfort, grittiness, slight photophobia and redness, and may include watery eyes especially in bright light.

Signs

- Small infiltrates <0.5mm
  - Single or multiple
  - Localised or diffuse
  - More common in mid-periphery and periphery, less common centrally
- If lid hygiene is poor, check where lid margin crosses the limbus
- Usually do not stain with fluorescein or lissamine green
- Punctate corneal fluorescein staining may be present
- Tear break-up time may be reduced
- Low grade increase in limbal hyperaemia (Figure 1)
- Slight watering in bright lights
- **Fluorescein staining over an infiltrate is a danger sign that the infiltrate may be progressing to an ulcer of some type.**

Causes

- Can be non-CL related. About 1 per cent of non-CL wearers have AIK in response to environmental irritants (pollution), viral infections etc
- In lens wearers – produced in response to contaminated lens triggering an inflammatory cascade in the cornea. Potential triggers include:
  - Denatured tear proteins
  - Contact lens care product contents
  - Infiltrates are more common if solution–induced staining is present
  - Biofilm contamination with microbes
  - Possibly hypoxic stress
  - More common in continuous and extended wear.
- Risk factors include:
  - Extended wear
  - Young male
  - Smokers
  - Wearers who do not comply with advice
  - Swimming in lenses.
- Lowest incidence with daily disposable lenses.

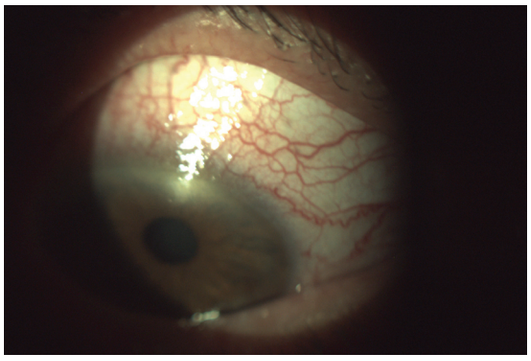

Figure 1 Limbal engorgement in infiltrative keratitis
Image courtesy of Andrew Matheson

Management

General principles – Reduce the inflammatory load on the cornea. Remember that infiltrates may not be contact lens related. The following guidance is based on my clinical experience and discussions with colleagues. **If you are not sure, discontinue wear completely and review in 1-2 days. Warn the wearer that if symptoms worsen he/she must contact you immediately.** There is usually no need for medical intervention.

- **AIK – up to four well scattered, very small infiltrates and absolutely no symptoms:**
  - May not be CL related
  - Option 1 – If daily wear, discuss with wearer, reassure may not be CL related, continue with existing lenses, review in 2-4 weeks
  - Option 2 – If daily or extended wear, as option 1 but start new lenses, new bottle of solution, new case, change from continuous wear to daily wear
  - Review hygiene.
- **AIK with minor symptoms or with many infiltrates, especially if associated corneal staining**
  - Rest from contact lens wear (if wear is unavoidable, daily disposables for short periods only)
  - Review in 4-6 weeks
  - Once infiltrates resolve recommence wear – new lenses, new bottle of solution and new case.
- **IK**
  - Complete rest from contact lenses until infiltrates resolved
  - Comfort drops may ease symptoms
  - Review in 4-6 weeks or sooner if symptoms worsen.
- **Staining infiltrate**
  - Discontinue CL wear
  - Review within 12-24 hours or sooner if symptoms worsen.

Resuming CL wear – review hand and lens hygiene. Pay attention to lens cases and how long bottles of solution are being kept once opened. Establish successful daily wear before cautiously returning to extended wear with close monitoring.

Prognosis

Good. Most cases of AIK and IK clear up rapidly. Recurrence is spasmodic. Persistent, repeated episodes of AIK or IK contraindicates extended wear.

Differential diagnosis

Scars. Look for loss of thickness and a thicker more opaque appearance when viewed in optic section.

Epidemic keratoconjunctivitis, adenovirus, viral conjunctivitis – associated sore throat or cold.

● Optometrist **Andrew Elder Smith** runs Contact Solutions Consultants which offers in-practice training to all team members from optometrists to front of house. Training is tailored to individual requirements and encompasses clinical and non-clinical aspects of patient and customer care