CLINICAL PRACTICE GUIDELINE: Emergency Department

Anterior Uveitis (AU)

Disclaimer: This Clinical Practice Guideline ('CPG') was written for use in The Royal Victorian Eye and Ear Hospital Emergency Department. It should be used under the guidance of an Ophthalmology or ENT registrar. If clinical advice is required, please contact the Eye and Ear Admitting Officer for assistance: EYE: +61 3 9929 8033; ENT: +61 3 9929 8032. Links to internal Eye and Ear documents cannot be accessed from the website CPG.

Description:

Inflammation of the anterior uveal tract, also referred to as iritis or iridocyclitis.

Red Flags:

- AU is a diagnosis of exclusion after ruling out posterior ocular involvement (vitreous, retina, choroid)
- Consider:
  - Endophthalmitis if there is a history of intraocular surgery
  - Metastatic endophthalmitis (e.g. Klebsiella endophthalmitis) – always ask if there has been a recent history of fevers or sepsis
  - Masquerade syndrome (e.g. malignancy, intraocular foreign body)
- In cases of chronic angle closure glaucoma, iris ischaemia can demonstrate anterior chamber cells
  - Children < 16 years old should be discussed with admitting officer
- Steroids may unmask Herpes simplex virus (HSV) epithelial disease in eyes with a known history of HSV

How to Assess:

History:

- Pain, photophobia, redness, tearing, blurred vision
- Prior history of uveitis or similar symptoms
- Review of systems:
  - Skin: rash, inflammatory lesions. Inquire about recent inflammation of tattoos
  - Musculoskeletal: arthritis
  - Respiratory: cough, shortness of breath
  - Genitourinary
  - Gastrointestinal

Examination:

- Miotic or irregular pupil shape may be seen if synechiae present
- Perilimbal injection
- Cornea should be clear unless associated keratitis
- Cells/flare in anterior chamber (grading as per below - use a high magnification slit beam at 1X1mm on maximum illumination, at a 45 degree angle)

Cells Grading

Grade	Number of cells
0	0
0.5+(trace)	1-5
1+	6-15
2+	16-25
3+	26-50
4+	≥50

Flare Grading

Grade	Flare
0	None
1+	Faint
2+	Moderate (iris and lens detail clear)
3+	Marked (iris and lens detail hazy)
4+	Intense (fibrin, +/- hypopyon)

Journal of Ophthalmology 2005;140: 509

- Vitreous: should be clear. Can be mild spillover of cells into anterior vitreous if significant anterior chamber inflammation
- Keratic precipitates (KP):
    - Nongranulomatous: fine precipitates on posterior corneal surface, usually inferiorly. If pigmented, usually old KP.
    - Granulomatous: large, greasy, "mutton fat" KP.
- IOP:
    - Low: ciliary body shutdown
    - High: blockage of trabecular meshwork with cells.

Investigations:

- Take a systematic history to direct investigations. If no suspicion of systemic disease, may not be necessary to work up initial episode.
- Consider work up if: recurrent, severe, bilateral disease, granulomatous uveitis, or systemic symptoms.
    - General workup: Full Blood Count, ESR, CRP, ACE, Syphilis serology
    - Child: ANA (JRA), electrolytes/urea/creatinine (EUC), urinalysis (glomerulonephritis)
    - Recurrent/hypopyon: HLA-B27
    - Granulomatous iritis: ACE, Chest X ray (or chest CT)
        - Note quantiferon gold (QFG) should not be ordered from ED/AOS. If suspicion high for TB-associated uveitis, then contact OIC for approval for QFG and further management plan.
    - **Note: Systemic evaluation may be best suited to outpatient setting**.

Acute Management:

Attempt to break synechiae:

- Topical medications:
    - Phenylephrine 2.5% eye drops X 3 (check blood pressure prior to giving drops)
    - Tropicamide 1% eye drops X 3
    - Cyclopentolate 1% eye drops X 2

Manage inflammation:

- Topical steroids:
    - Prednisolone acetate/phenylephrine hydrochloride eye drops, (Prednefrin forte®)
- Cycloplegic agent to decrease risk of posterior synechiae
    - Cyclopentolate 1% eye drops TDS
- Suggested treatment guidelines:
    - Prednefrin forte® eye drops, 1 hourly while awake
    - Cyclopentolate 1% eye drops, TDS
    - If severe inflammation: consider loading with Prednefrin forte® eye drops every 15-30 minutes drops for 2 hours
    - Elevated IOP: Discuss with Senior Clinician
    - Avoid prostaglandin analogues and pilocarpine as may be pro-inflammatory

Follow up:

Most cases can be reviewed in 1 week in the Acute Ophthalmology Clinic.

- See sooner if:
    - Elevated IOP
    - Associated corneal disease
    - Presence of hypopyon
    - Impaired posterior segment visualisation
    - Systemically unwell, or in immunocompromised patients
- Consider involvement of ocular immunology clinic when severe, not responding to management, likely to be chronic (bilateral disease, associated systemic disease)
- Distinguish recurrent AU (2 separate attacks) from non-resolving protracted AU (inadequate treatment, noncompliance with medications)
- For recurrent AU, the patient may be able to provide helpful information on duration of their steroid treatment until resolution of their inflammation during previous episodes.

Discharge instructions:

- Give patient copy of Iritis (Anterior Uveitis) Patient Information
- Written instructions on drops/frequency and follow up appointment
- Educate patient as to potential recurrent nature of AU, complications of topical steroids, and importance of compliance with medications and follow-up appointments.

Evidence Table

Author(s)	Title	Source	Level of Evidence (I – VII)
Timothy L. Jackson	Moorfields Manual of Ophthalmology 2008		VII
	The Wills Eye Manual, 5th edition		VII
SUN	American Journal of Ophthalmology 2005;140: 509		VII
	American Academy of Ophthalmology, Focal Points, Diagnosis and Management of Anterior Uveitis, January 2002		VII
Julie Jacob, Joachim Van Calster	Skin tattoos and the development of uveitis, 02 July 2013	Acta Ophthalmologica	VII
Annie Stuart, et al	Clinical update: Watch for Tattoo-Related Uveitis: an Emerging Concern, October 2019	American Academy of Ophthalmology, EyeNet Magazine	Vii

The Hierarchy of Evidence:

The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynk and Fineout-Overholt (2011).

I) Evidence obtained from a systematic review of all relevant randomised control trials.
II) Evidence obtained from at least one well designed randomised control trial.
III) Evidence obtained from well-designed controlled trials without randomisation.
IV) Evidence obtained from well-designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case series.
V) Evidence obtained from systematic reviews of descriptive and qualitative studies.
VI) Evidence obtained from single descriptive and qualitative studies.
VII) Expert opinion from clinician, authorities and/or reports of expert committees or based on physiology.

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