CLINICAL PRACTICE GUIDELINE: Emergency Department

Anterior Uveitis (AU)

See also: Red Eye

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)
- Beware of endophthalmitis if there is a history of intraocular surgery
- Beware of metastatic endophthalmitis (e.g. Klebsiella endophthalmitis) – always ask if there has been a recent history of fevers or sepsis
- Beware of infectious keratitis. Steroids may unmask Herpes simplex epithelial disease
- Beware of 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 or senior colleague

How to Assess:

History:

- Pain, photophobia, redness, tearing, blurred vision
- Prior history of similar symptoms

Examination:

- Miotic pupil
- Irregular pupil shape possible if synechiae present
- Perilimbal injection
- Cells/flare in anterior chamber (use high magnification, with a 1X1mm, high intensity beam of light, slit 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)

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- Vitreous: should be clear. Can be mild spill-over of cells into anterior vitreous if significant anterior chamber inflammation
- Keratic precipitates (KP):
    - Non-granulomatous: 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.
    - Corneal surface should be clear unless uveitis related to keratitis

Investigations:

- Take a proper systematic history to direct investigations. If no suspicion of systemic disease, may not be necessary to work-up initial attack.
- 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 (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 out-patient setting. Recommend approval by admitting officer or consultant if ordering investigations from emergency department.**

Acute Management:

Attempt to break synechiae:

- Topical medications:
    - Phenylephrine 2.5% eye drops every 5 minutes X 3 (check blood pressure prior to giving drops)
    - Tropicamide 1% eye drops every 5 minutes X 3
    - Cyclopentolate 1% every 5 minutes 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:

- Suggested guidelines:
    - Trace - 2+: Review at 1 week
    - 2+ - 3+ cells: Review at 3-5 days
    - >3+ cells: Review at 1-2 days
- If elevated IOP, may need to follow up sooner than suggested
- Should be reviewed in outpatient clinic. Consider involvement of ocular immunology clinic when severe, not responding to management, likely to be chronic (bilateral disease, unstable HLA-B27, 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.

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

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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