

374FM.5 UVEITIS

INVESTIGATION

For all forms of uveitis (anterior, intermediate, posterior, panuveitis):

- It is essential to take a meticulous history and examine for both ocular and systemic symptoms. Screen for skin, joint problems, respiratory disease, ulcers (oral or genital), neurological disease, bowel, sexually transmitted disease, recent travel.
- Examine posterior segment (dilated fundoscopy of both eyes) for choroiditis, pars planitis, tumours, retinal detachment in all patients.
- Baseline investigation for all patients:
 - BP, Blood glucose, FBC, ESR, U&E, CXR, ACE
- Investigation targeted to specific diseases depending on history and examination. Specific investigations where clinically suspected:

- Ankylosing spondylitis	X-ray of sacro-iliac joints
- Sarcoidosis	CXR, ACE
- Toxoplasmosis	Serology
- Behçets	HLA-B51
- Tuberculosis	CXR, Mantoux (ELISPOT – after discussion with a consultant)
- Syphilis	Serology
- Toxocara	Serology
- HIV	Serology (only after informed consent)
- Lyme, Bartonella, Brucella	Serology
- Wegener's	Auto-antibodies (cANCA)
- SLE	Auto-antibodies (double-stranded DNA)
- ARN/PORN	Herpetic serology
- First episode of unilateral acute anterior uveitis without systemic features does not need investigation unless the attack is severe or bilateral. Recurrent attacks should be investigated.
- Toxoplasmosis antibodies persist permanently once produced. Hence, a negative antibody test virtually rules out toxoplasmosis.
(NB: May find negative titre in HIV and severely immunocompromised patients.)
- Behçets Disease virtually excluded if oral ulcers are absent.
- If infective cause strongly suspected (but systemic investigation negative), consider PCR testing of vitreous/aqueous sample (seek consultant advice).

TREATMENT

ANTERIOR UVEITIS

- Baseline investigations as outlined above
- Topical steroids (dexamethasone 0.1% or prednisolone 1% eye drops as PredForte® (standard eye drops – if patient allergic to preservative use dexamethasone 0.1% PF)); frequency up to every ½ hour as necessary (consideration should be given to a subconjunctival injection of steroid, e.g. betamethasone).
- Mydriatic drops – cyclopentolate 1% eye drops 12 hourly. If this is not effective then atropine 1% eye drops 12 hourly. If still insufficient consider Mydracaine no. 2 (unlicensed) subconjunctival injection.

- Pressure lowering drugs.
 - Topical antihypertensives:
 - 1st choice – timolol 0.25% eye drops 12 hourly
 - 2nd choice - brinzolamide 1% eye drops 8 hourly
 - 3rd choice - apraclonidine 1% 8 hourly eye drops as necessary (unlicensed in anterior uveitis*); avoid prostaglandin analogues. (Red-listed – hospital only.)
 - Oral or IV acetazolamide as necessary.
 - Dose oral and IV: Adults: 250 – 1000 mg daily in divided doses.
 - IV dose preferably given as a bolus through a central line or large peripheral vein. Rate should not exceed 100 - 500 mg/min. Each 500 mg ampoule to be reconstituted with at least 5 ml of water for injections. (See [Guideline 222 Injectables Policy and Guide \(Adults\)](#) for IV administration.)
- Acetazolamide is contraindicated in situations in which sodium and/or potassium blood levels are depressed, in cases of marked kidney and liver dysfunction, suprarenal gland failure and hyper-chloraemic acidosis. Acetazolamide should also not be used in patients with hepatic cirrhosis as this may increase the risk of hepatic encephalopathy. If use is prolonged monitor blood count and plasma electrolytes.
- In severe inflammation/poor mydriasis consider subconjunctival injection of betamethasone (as sodium phosphate) 4 mg/ml injection (Betnesol®) – single dose: 0.5 – 1 ml and mydracaine (Mydracaine No. 2 (adults) injection (unlicensed) which is used for rapid dilation of the pupil in iritis and uveitis - dose: 0.3 ml by subconjunctival injection. (Each 0.3 ml of Mydracaine No. 2 injection contains procaine HCl 6 mg, atropine sulphate 1 mg, and adrenaline solution (1 in 1000) 0.12 ml.¹)
 - When inflammation controlled, tail off steroids gradually - patients can be left to do this once instructed. Suggest reducing the daily dose by 1 drop every week if symptoms settled.
 - In recurrent episodes ensure previous doctor has excluded ocular causes and systemic associations. Some patients present very early as symptoms may occur before signs are present. Titrate prescription to severity of previous attack. Maintenance may be necessary.
 - If attack not settling, check compliance.
 - Consider admission if inflammation severe or poor compliance.
 - In Fuchs cyclitis - mydriatic eye drops are unnecessary and topical steroid given only for severe inflammation, for giant cells on intraocular lens, and for hypertensive exacerbations.

INTERMEDIATE UVEITIS

- Baseline investigations as outlined above.
- No treatment necessary if patient asymptomatic.
- For symptomatic patients (floaters, macular oedema) consider a trial of topical steroid as stated under [Anterior Uveitis](#).
 - Uniocular – posterior sub-Tenon or orbital floor injection of intramuscular depot steroid (40 mg of triamcinolone acetonide - unlicensed); avoid if possible in 'steroid responders' but, if necessary to give, ensure appropriate antihypertensive cover provided under supervision in Ophthalmic clinics.
 - Binocular (or uniocular disease uncontrolled on depot injection) – systemic steroid (oral prednisolone 1 mg/kg body weight daily).
- Titrate treatment to symptoms rather than disease severity on examination.
- Treat associated anterior uveitis with steroid drops (as stated above).

POSTERIOR UVEITIS

- Baseline investigations as outlined above.
- Early discussion with consultant.
- Treat only if vision affected or threatened.
- Diagnosis must be established where possible, with urgency in many cases. Seek sub-specialist help when appropriate.
- Systemic steroid is the mainstay of treatment of many conditions (oral prednisolone 1 mg/kg body weight, daily (maximum daily dose 60 mg)) (combined with anti-infective agents if indicated).
 - Monitor BP, blood glucose, U&E, bone density.
 - Consider GI protection as advised in [Guideline 656 Use of Proton Pump Inhibitors \(PPIs\)](#).
 - Consider oral calcium and vitamin D supplementation as advised in [Guideline 402FM Osteoporosis: Primary Fracture Prevention Guidelines in Men and Women over the Age of 50 with Risk Factors](#).
 - Once inflammation controlled, taper prednisolone tablet by 10 mg each week. Monitor for relapse/adverse effects associated with withdrawal of steroid.
 - Consider steroid-sparing drugs (in conjunction with consultant ophthalmologist/ rheumatologist) if maintenance dose above 10 mg/day or intolerable side-effects.
- Current treatment for toxoplasmosis (only if sight-threatening (within the arcade, near the disc, intense vitreous activity))

The following are recommended or commonly used regimens:

- i. Sulfadiazine 1 g PO 6 hourly (unlicensed) plus pyrimethamine 50 mg loading dose, then 25 mg PO 12 hourly with folinic acid 15 mg three times/week.
- ii. Clindamycin 150 – 300 mg PO 6 hourly plus sulfadiazine 1 g PO 6 hourly.
- iii. Co-trimoxazole (trimethoprim 10 mg/kg plus sulfamethoxazole 50 mg/kg PO 24 hourly in 2 divided doses).

NB: The consultant ophthalmologist will decide which regimen is appropriate.

All of the above regimens may be combined with prednisolone 20 - 40 mg PO daily if the active lesion is threatening the optic nerve or macula. If used, steroid therapy should commence 24 hours after initiation of antimicrobial treatment and should be stopped before anti-toxoplasma therapy is discontinued. Treatment duration is 3 - 4 weeks depending on response (NB: Sulfadiazine is licensed for 7 days treatment only).

Review weekly with blood count - required while on pyrimethamine and/or sulfadiazine.

For patients on clindamycin: Warn patients about importance of seeking immediate medical aid if gastrointestinal problems develop (especially diarrhoea), as pseudomembranous colitis and *C. difficile* is a potential side-effect.

Seek further advice before treatment for immunocompromised patients and regarding drug safety in patients who may be pregnant.

Advise women of childbearing age with primary toxoplasmosis (IgM +ve) of the risk to the foetus.

- For AIDS and CMV retinitis, liaise with sub-specialist urgently (GU unit at Churchill Hospital, Oxford).
- Electrophysiological monitoring for birdshot retinochoroidopathy.

ENDOPHTHALMITIS

- See [Guideline 372 Ophthalmic Infections](#).

***UNLICENSED MEDICINES**

The unlicensed medicines in this guideline are categorised with the following risk:

Drug	Risk
MYDRICAINE No. 2 Injection	Medium

The management of the three risk categories are summarised below:

Risk	Record keeping of receipt	Record keeping of supply	Awareness of UMP status amongst prescribers, pharmacists and nurses	Verbal patient consent documented in clinical notes	Written patient consent documented in clinical notes	Record of UMP status on drug chart, TTO, OP prescription	Generic PIL
Low	✓	✓	X	X	X	X	X
Medium	✓	✓	✓	✓	X	✓	✓
High	✓	✓	✓	✓	✓	✓	✓

For further information please see [Guideline 224 Unlicensed Medicines Policy](#).

References:

1. Moorfields Eye Hospital NHS Foundation Trust Pharmacists Handbook 2006.
2. Mandell et al. Principles and Practice of Infectious Diseases 7th ed.
3. Nicholas P. Jones. Uveitis 2nd ed.

See also:

[Guideline 222](#) [Injectables Policy and Guide \(Adult\)*](#)

[Guideline 224](#) [Unlicensed Medicines Policy*](#)

[Guideline 372](#) [Ophthalmic Infections*](#)

[Guideline 402FM](#) [Osteoporosis: Primary Fracture Prevention Guidelines in Men and Women over the Age of 50 with Risk Factors](#)

[Guideline 656](#) [Use of Proton Pump Inhibitors \(PPIs\)*](#)

* For use in BHT only

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