

Management of patients with Acute (<4 weeks) Optic Neuritis

Key Points

- Patients with acute/subacute monocular or bilateral visual acuity loss need to be urgently assessed by Ophthalmology and causes other than inflammatory optic neuritis need to be considered
- ON is often the first manifestation of central nervous system inflammation such as MS, AQP4 antibody disease or MOGAD and these disorders need to be investigated
- Severe ON will need urgent treatment

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Abbreviations

AECU	Acute emergency care unit
AAU	Acute assessment unit
ANA	Anti nuclear antibodies
ANCA	Anti neutrophil cytoplasmic antibodies
CRP	C-Reactive Protein
DMT	Disease Modifying Therapy
EBV	Ebstein Barr Virus
ESR	Erythrocyte sedimentation rate
FBC	Full Blood Count
HIV	Human Immunodeficiency Virus
MRI	Magnetic resonance imaging
MS	Multiple Sclerosis
od	Once daily
ON	Optic neuritis
OCT	Optical Coherence Tomography
RAPD	Rapid afferent pupillary defect
TDS	Three times a day
U&E	Urea & Electrolytes
VRDL	Venereal disease research laboratory

Acute Optic Neuritis

Inflammatory Demyelinating Optic neuritis (ON) has an annual incidence of 6.4 per 100,000. The lifetime risk of developing Multiple Sclerosis (MS) after ON is 50-60%. At least 50% of patients with MS will have had ON at some time in their disease, with ON being the presenting symptom of MS in 15-20% of cases. In addition, ON can be the presenting symptom of other inflammatory and infectious diseases that need to be excluded and treated (i.e., neuromyelitis optica associated with aquaporin-4 antibodies (NMOSD-AQP4), MOG antibody associated disease (MOGAD), syphilis, mycoplasma, vasculitis, sarcoidosis, EBV)^[2].

ON presents with reduced monocular visual acuity/colour vision loss (by Ishihara test or equivalent) with progression over hours/days and <4 weeks, confirmed by an experienced Ophthalmologist. Patient should have: the severity and clinical course of visual loss documented, formal visual fields, fundoscopy, pupillary reflexes (i.e. RAPD) and pupil dilatation for fundal photos, ocular pressure and OCT or fluorescein angiogram as indicated^[1, 3, 5].

Exclude '**Red flags**': pain or loss of vision for more than 2-4 weeks, absence of pain, bilateral simultaneous or rapid sequential ON, age >50yrs retinal abnormalities, vitritis/uveitis, unexplained optic atrophy, red eye, raised inflammatory markers, constitutional symptoms or history of cancer/immunodeficiency/cat scratch. (Ophthalmology team to request ***blood tests** outlined below in the Optic neuritis with "Red flag" section).

If the patient has typical ON with mild to moderate visual loss (visual acuity better than 6/60), normal visual acuity in the contralateral eye and red flags have been excluded, the patient may go home from the Ophthalmology clinic.

Ophthalmology team to email an **urgent referral containing full clinical details (including patient contact details) and results of all ophthalmology tests**. Follow this with an urgent formal referral. Please call Neurology department (Wexham Park Hospital or Frimley Park Hospital).

Ophthalmology to arrange an out-patient MRI scan of brain and orbits with contrast and explain why this is needed including the risks of developing MS

If non-inflammatory and infectious causes of visual loss have been excluded consider starting methylprednisolone 500mg od orally for 5 days associated with gastric protection (omeprazole 20mg od orally)^[4]. Give information on steroid side effects - <https://www.medicines.org.uk/emc/medicine/8214> or <https://www.mstrust.org.uk/a-z/steroids-methylprednisolone>). Visual acuity severity, steroid side effects and patient preference should be considered. The treatment of ON with steroids reduces pain, accelerates visual recovery but does not affect long term visual recovery.

If significant retro-ocular pain: Amitriptyline 10mg at night or Gabapentin 100 mg TDS.

Neurology to book an **Urgent** clinic appointment. Neurology will review bloods and MRI results

Acute Optic Neuropathy with “Red Flags”

If moderate to severe visual (visual acuity 6/60 or worse), symptom onset < 4 weeks and/or medical “Red Flags”, Ophthalmology team to refer the patient to ambulatory emergency care unit within working hours that day (Frimley Park AECU –03006139238 or Wexham Park AECU – 03006152759). Patient to be seen by ambulatory care team in less than three days.

AECU check temperature, blood pressure, general exam, chest X-Ray. Obtain urgent ***blood tests** glucose, U&E and ESR/CRP, FBC, Vit B12, folate, HIV, VRDL, Borrelia, ANA, ANCA, ACE. Severe and/or bilateral optic neuritis – anti-Aquaporin 4 antibodies and anti-MOG to be sent (at Wexham site please add to the request ‘Immunology lab – for the attention of Roz Hawkes, and then to Oxford Neuroimmunology lab’). Consider *Bartonella henselae* serology if neuroretinitis/cat scratch, Quantiferon if systemic symptoms/raised inflammatory markers.

Urgent outpatient orbits MRI

If non-inflammatory and infectious causes of visual loss are excluded consider starting methylprednisolone 500mg od orally for 5 days associated with gastric protection (omeprazole 20mg od orally)^[4]. Give information on steroid side effects - <https://www.medicines.org.uk/emc/medicine/8214> or <https://www.mstrust.org.uk/a-z/steroids-methylprednisolone>). The severity of loss of Visual Acuity, steroid side effects and patient preference should be considered.

The treatment of ON with steroids reduces pain and accelerates visual recovery. In MOGAD and AQP4-ON, prompt steroid treatment can affect long-term outcomes and recovery.

Patients with optic neuritis “red-flags” need to be seen by ophthalmology after oral/IV methylprednisolone, to assess recovery and decide about escalation (PLEX/IVIG), if needed or prednisolone tapering dose.

If significant retro-ocular pain: Amitriptyline 10mg at night or Gabapentin 100 mg TDS

If there are other significant Neurological complaints/signs (i.e., weakness, swallowing difficulties) or evidence of acute systemic disease (i.e., raised inflammatory markers) – AAU admission for Neurology assessment and consideration of spinal cord imaging/lumbar puncture/chest CT/IV methylprednisolone.

Otherwise, the patient to be referred for outpatient neurology follow-up at respective site and at the Frimley-site only a referral made to Consultant Ophthalmologist These are formal referrals (and not simply a copy of the discharge summary) containing full clinical details (including patient contact details), results of *all* tests results including the ophthalmology tests in outlined in point 1 and treatment. For Frimley site patients, email fhft.neuromedsecs@nhs.net and for Wexham Park site patients email to: fhft.neurologysecretarieshwph@nhs.net. Copies of referral/discharge summary should be sent to both the patient and their GP.

Acute Optic Neuritis in Patients with Known MS

This is classified as a MS relapse so is important as it informs the use/escalation of disease modifying therapies (DMT).

If the patient has typical ON with mild to moderate visual loss (visual acuity better than 6/60), normal visual acuity in the contralateral eye and red flags have been excluded, he/she may go home from the Ophthalmology clinic.

Ophthalmology team to email an **urgent referral containing full clinical details (including patient contact details) and results of all ophthalmology tests** Follow this with an urgent formal referral. Neurology secretary emails Wexham site:

fhft.neurologysecretarieshwph@nhs.net; Frimley site: fhft.neuromedsecs@nhs.net.

Alternatively, the patient should be asked to contact their MS helpline/

fhft.neurocarenav@nhs.net.

Neurology will arrange MRI scan of brain, orbits and spine as appropriate for DMT.

If non-inflammatory and infectious causes of visual loss have been excluded consider prescribing methylprednisolone 500mg od orally for 5 days associated with gastric protection (omeprazole 20mg od orally). Give information on steroid side effects - <https://www.medicines.org.uk/emc/medicine/8214> or <https://www.mstrust.org.uk/a-z/steroids-methylprednisolone>). Visual acuity severity, steroid side effects and patient preference should be considered. The treatment of ON with steroids reduces pain, accelerates visual recovery but does not affect long term visual recovery

If significant retro-ocular pain: Amitriptyline 10mg at night or Gabapentin 100 mg TDS.

The Neurology secretaries/MS coordinator to book an urgent Neurology MS clinic appointment. The Neurology team will review the results of any MRIs often in the MS MDT (including a senior radiology review).

References

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Full version control record

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Guidelines Lead(s):	Dr Silvia Messina, Consultant - Neurology Mrs. Karima Nesnas, Consultant - Ophthalmology Dr Krishna Chinthapalli, Consultant - Neurology Dr. Jeremy Stern, Consultant - Neurology Judith Wilton, Lead MS Nurse
Contributor(s):	Dr. Bethan Graf, Consultant - AAU Sean Harding, Consultant Nurse in Acute Care Dr. Elena Boyd, Consultant Radiologist Dr Robert Barker, Consultant Radiologist
Lead Director / Chief of Service:	Dr Chris Orchard, CoS for Medicine Lt Col N Okpala, CoS for Specialist Surgery
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Version History

Version	Date	Guideline Lead(s)	Status	Comment
1.0	May 2021	Consultant Neurology Consultant Ophthalmology Consultant Neuro-ophthalmology	Final	Trust wide guideline.
2.0		Consultant Neurology Consultant Ophthalmology Consultant Neuro-ophthalmology	Final	Scheduled review

Related Documents

None