Clinical Management Guideline:

Medical Retinal Monitoring (Hydroxychloroquine / Chloroquine)

The Royal College of Ophthalmologists recommends annual monitoring for hydroxychloroquine retinopathy for patients on long-term therapy. This guideline describes an integrated service model, meeting RCOphth guidelines, with monitoring for retinopathy delivered within an optical practice and virtual review provided by the hospital eye service (HES).

All practitioners involved in service delivery are expected to consider Royal College of Ophthalmology clinical guidelines published December 2020.
https://www.rcophth.ac.uk/wp-content/uploads/2020/12/Hydroxychloroquine-and-Chloroquine-Retinopathy-Monitoring-Guideline.pdf

Identification of eligible population

Eligibility criteria:

- All individuals who have taken hydroxychloroquine for greater than five years should receive annual monitoring for retinopathy.
- All individuals who have taken chloroquine for greater than one year should receive annual monitoring for retinopathy.
- All individuals taking hydroxychloroquine who have additional risk factors for retinal toxicity, as determined by their prescriber, may be monitored annually after the initiation of therapy.

It is the prescribing doctor's responsibility to ensure their patients are adequately monitored and to act on the results of monitoring.

Patients recently commenced on Hydroxychloroquine or Chloroquine will be referred to the monitoring service, by their prescribing doctor, when they become eligible. Prior to referral, risk factors will be identified and discussed with the patient to inform the patients individual management plan and when retinal monitoring should commence.

At service implementation, patients already on therapy should be identified and triaged to identify eligibility for monitoring. Risk stratification of the eligible cohort will help to ensure individuals most at risk of visual loss are seen at the earliest opportunity.

Protocols for patient identification, triage and risk stratification will need to be agreed locally ahead of service implementation.

Monitoring assessment

Annual monitoring for retinopathy will be offered to all eligible patients. Eligible patients will be invited into the service and issued with an appointment at their closest participating optical practice.

Individuals taking hydroxychloroquine will commence monitoring after 5 years of treatment, unless additional risk factors have been identified requiring annual monitoring throughout treatment. Individuals taking chloroquine will commence monitoring after 1 year of treatment.

Monitoring assessments will include:

- Pupil dilation, if required
- Imaging with spectral domain optical coherence tomography (SD-OCT)
- Imaging by widefield fundus autofluorescence (*FAF)

**If widefield FAF is not available, FAF can be acquired in several photographic fields to encompass the macula and extra-macular areas.*
RCOphth recommendation: FAF scans of greater than 50 degrees are recommended but overlapping scans less than 50 degrees which include the extra-macular retina are acceptable.

Outcomes:

- No toxicity. Advise on next monitoring appointment – if no abnormalities suggestive of toxicity are detected the patient should be reassured and advised on the need for continued annual monitoring.
- Either SD-OCT or Widefield FAF abnormal. Advise on need for further assessment and arrange in primary care. Referral for HES virtual review will be required once the clinical dataset is complete, see below, but may be invited earlier for advice and guidance in cases of uncertainty.
- SD-OCT and Widefield FAF abnormal – Refer to Hospital Eye Service for virtual review and advise on likely need for further investigation within the hospital.
- Referral outside of the service – If another pathology requiring referral has been identified, local referral protocols should be followed, and appropriate advice given to the patient.
- Referral to low vision support services – Individuals with reduced vision should be supported to access suitable services. This may involve low vision or eye clinic liaison officer (ECLO) services, certification of vision impairment, and referral to local and/or national charities.

Further assessments are indicated to complete clinical dataset, if structural abnormalities have been identified on either SD-OCT or FAF, prior to virtual review by the hospital eye service:

- Visual Field testing (10-2 or 30-2 automated static testing with a white stimulus). Patients with abnormalities on either SD-OCT or fundus autofluorescence imaging should undergo automated visual field testing using either a 10-2 or 30-2 protocol depending on the location of the structural abnormality.
- Patients with abnormal visual field test results may need to have this repeated on another day.

The primary care practitioner will normally be expected to advise on the need for further confirmatory investigations and make arrangements to complete these ahead of the virtual review. If dilating eye drops were used for imaging, the patient should be called back for visual fields on another day.

Whatever the outcome of the monitoring assessment, patients will be advised to continue their drug treatment.

The outcome of the monitoring assessment will be communicated to the patient, their GP and prescribing doctor. Outcome data will be available to the clinical leads for continued service evaluation and audit.

Virtual review of monitoring assessment by ophthalmologist (or delegated reviewer)

A virtual review of all referrals following clinical examination (and a portion of those not referred) will allow for validation of clinical findings, advice and guidance, quality assurance and appointment prioritisation, as needed.

The ophthalmologist (or their delegated reviewer) will review the assessment information and communicate their findings back to the prescribing doctor inviting a discussion on next steps.

The ophthalmologist (or their delegated reviewer) will advise on:

- Disease severity (mild, moderate, or severe) and risks relating to the patient's continuation of treatment to help inform a discussion between patient and prescribing physician.
- Patient suitability for continued monitoring, following RCOphth recommendation: Where a patient taking hydroxychloroquine or chloroquine cannot undergo monitoring, or in whom retinal imaging cannot be performed or images interpreted, a discussion between the patient and the prescribing physician is recommended to determine whether hydroxychloroquine treatment should be continued without retinal monitoring.
- Need for further investigation within the hospital eye service to confirm toxicity. RCOphth recommend multifocal electroretinography (ERG) in specific circumstances: when structural abnormalities on SD-OCT or FAF cannot be detected on repeated visual field testing.

- Eligibility for other support services. This may involve referral to low vision or eye clinic liaison officer (ECLO) services, certification of vision impairment, and referral to local and/or national charities.
- Requirements for continued driving, if visual function is impaired. Patients who are drivers should be advised not to drive until an Estermann visual field test confirms it is legal to do so. The patient should be advised to inform the Driver and Vehicle Licensing Agency (DVLA).

The virtual review information, including the final outcome following discussion, will be copied to the referrer, GP and patient. Outcome data will be available to the clinical leads for continued evaluation and audit.

At all points in the pathway information should be made available to patient. In addition to oral communication, written information about hydroxychloroquine retinopathy and monitoring for hydroxychloroquine retinopathy should be available.
Patient-information-leaflet-draft-1.pdf (rcophth.ac.uk)

Annual recall

Annual monitoring will continue unless treatment is stopped by the prescribing doctor or the individual considered not suitable for continued monitoring by the ophthalmologist (or their delegated reviewer).

The patients first monitoring assessment will allow the ophthalmologist (or their delegated reviewer) to advise on the individuals suitability for monitoring (adequate assessment may not be possible with retinal co-pathology or for patients unable to cooperate with the tests).