Rheumatology and Optometry/Ophthalmology Working Together

Optometry has an opportunity to help our patients and work together more effectively with rheumatology and ophthalmology.

This is about Plaquenil (and chloroquine) and communicating the results of screening and baseline tests for Bull's eye maculopathy with rheumatology. Essentially, best practice suggests that full results should be communicated back to the patient and their rheumatologist.

Plaquenil is a very effective treatment for inflammatory and skin disorders with relatively few side effects compared to alternative treatments. However, after some years of use it can cause Bull's eye maculopathy, a potentially debilitating visual loss.

Bull's eye maculopathy is untreatable except for the cessation of Plaquenil use and even then the condition can progress from a relatively minor to a severe loss of visual function.

Baseline test should be performed within the first year of treatment and screenings at yearly intervals after five years of treatment unless there is an increased risk of toxicity, when more frequent screenings are indicated. Ideally, all data and an opinion should be included in the report to help the rheumatologist's assessment and also assist with interpreting your report with other future reports, which may be generated elsewhere.

Members will of course use their discretion and clinical acumen but I would suggest the report include the Humphry Visual Field Analyser 30-2 (the 10-2 test is adequate in most cases but may fail with losses of a peri-central nature) test or Medmont central visual field test (with paracentral points added) and an assessment of posterior pole retinal thickness and retinal layer integrity with an SD-OCT

Optometry and ophthalmology's role in preventing Bull's eye maculopathy is to alert rheumatology when there is any reasonable suspicion that Bull's eye maculopathy may be possibly developing. I use the words reasonable and possibly because once the development of Bull's eye maculopathy is certain the potentially insidious progression of this condition means it may be too late.

Bull's eye maculopathy begins as a para-fixation (within 6° of fixation point) or peri-fixation (extending to 8°) loss of visual function characterised by damage to the outer retinal layers and retinal pigment epithelium. In most cases losses are para-central but in some cases and especially in Asian races the losses can be peri-central. As members know, the signs consist of subtle pigment hypo and hyper changes near the maculae but also possibly in the region of the arcades in peri-central loss with similar hypo and hyper fluorescent changes in auto-fluorescent imagery. Similarly, SD-OCT images show damage and thinning of the outer retinal layers.

As members know, the risk of Bull's eye maculopathy developing is dependent on dose as a function of body weight, time taken and other factors, for example, such as impaired renal/liver function, tamoxifen use and pre-existing macula conditions.

The following charts indicate the risk of Bull's eye maculopathy as a function of dose and time. For normal doses, less than 5mg/kg of body weight, risk is small within the first 5 years with the risk increasing with dose and time taken.

Rheumatology requests that we provide a full report when we screen patients for Bull's eye maculopathy. The report should include visual field data and an SD-OCT assessment of retinal thickness and retinal layer integrity to provide a baseline and allow assessment of change, which may occur up to a decade or more into the future. Since clients may change location in this time frame a copy of the report should be sent to the client. Given that Rheumatologists (and/or other medical practitioners) may not be clear on the interpretation of these results, a summary of the findings may also assist in a patient's management.

In cases where there is any suspicion of Bull's eye maculopathy, it is recommended that referral to ophthalmology is initiated for an mf-ERG assessment of macular function. In WA this is performed at SCGH and for Medicare reasons needs to be arranged by the rheumatologist or ophthalmology.

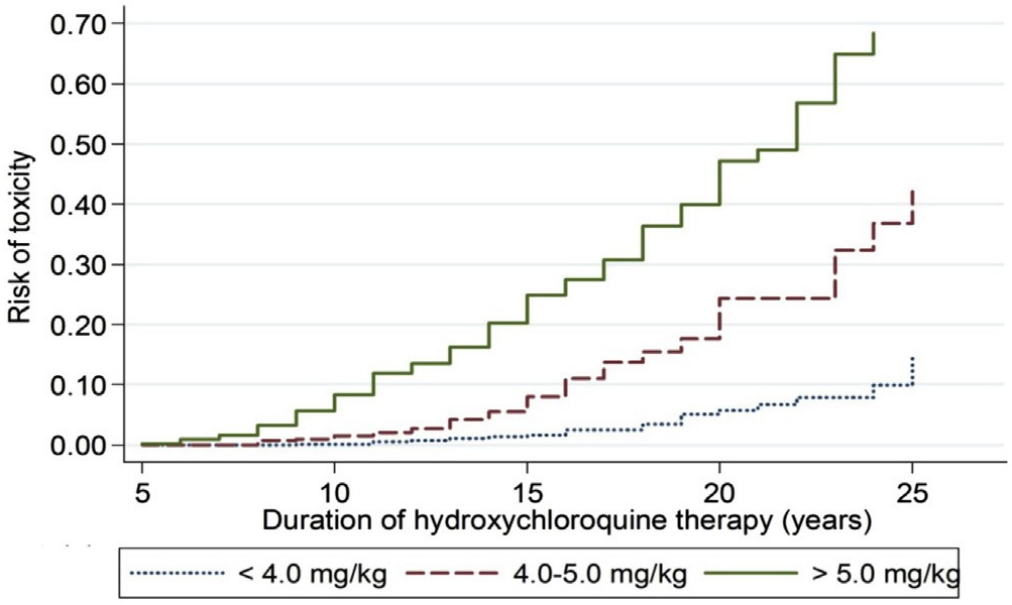
For more information I suggest:

Hydroxychloroquine and Chloroquine Retinopathy: Recommendations on Screening, Royal College of Ophthalmology 2018

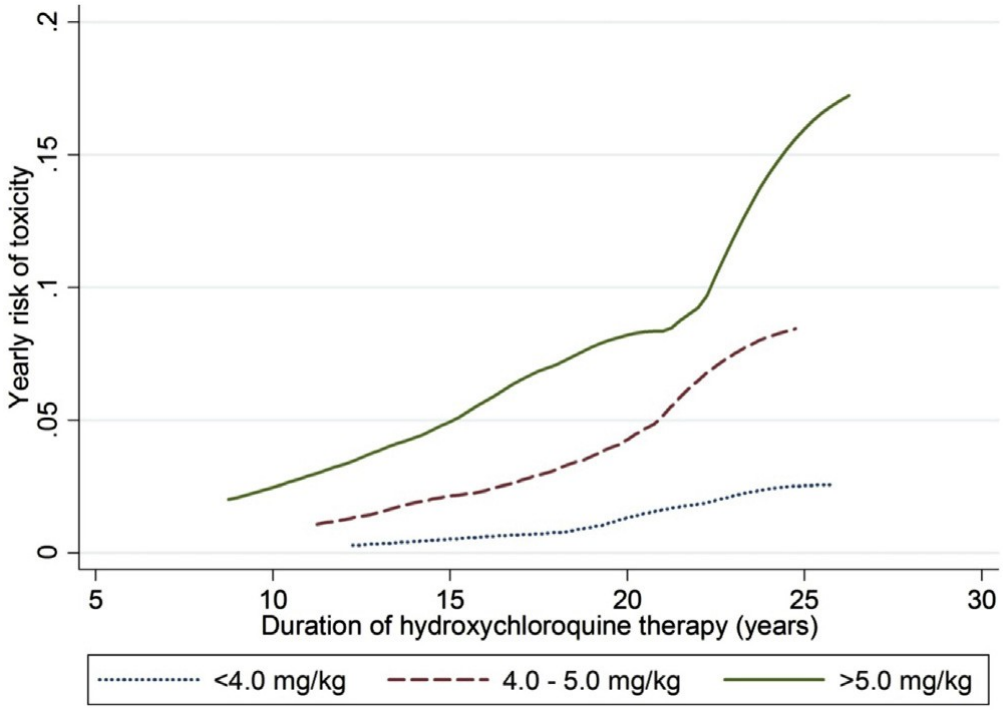
Recommendations on Screening for Chloroquine and Hydroxychloroquine Retinopathy (2016 Revision), American Academy of Ophthalmology Statement

Melles RB, Marmor MF. The risk of toxic retinopathy in patients on long-term hydroxychloroquine therapy. JAMA Ophthalmol 2014;132:1453e60.2

Xu P. Demystifying Bull's Eye Maculopathy, Pharma, March 2020



The cumulative risk of retinopathy over time, as a function of different levels of hydroxychloroquine (HCQ) use. When use is between 4.0 and 5.0 mg/kg, the risk is very low within the first 5 to 10 years, but it increases markedly afterwards. From: Melles RB, Marmor MF. The risk of toxic retinopathy in patients on long-term hydroxychloroquine therapy. JAMA Ophthalmol 2014;132:1453e60.2



The incremental annual risk of toxicity for a patient at different levels of hydroxychloroquine (HCQ) use who is found to be free of retinopathy at a given point in time. The annual risk is low within the first 10 years of use, but increases with longer durations of therapy. From: Melles RB, Marmor MF. The risk of toxic retinopathy in patients on long-term hydroxychloroquine therapy. JAMA Ophthalmol 2014;132:1453e60.2