

MONITORING FOR PLAQUINIL-INDUCED RETINAL TOXICITY

Plaquenil is used for the treatment of malaria, systemic lupus erythematosus, rheumatoid arthritis, and other inflammatory and connective tissue diseases. Retinal toxicity from Plaquenil is of serious concern because even after cessation of the drug there is little if any visual recovery, and sometimes a progression of visual loss over several years after the drug has been stopped. Fortunately, retinal toxicity from plaquinil is quite rare relative to the number of individuals taking the medication. Over a long period of time, the drug may have a cumulative affect on the retinal pigment epithelium (RPE). The RPE is responsible for the health of the retina, and damage may lead to permanent visual loss. The drug also has a toxic effect on photoreceptors in the retina. No medical therapy has proven effective in Plaquenil toxicity other than cessation of the drug. There may be a stage of very early functional loss where cessation of the drug will allow a reversal of the toxicity. However significant clinical recovery does not typically occur after changes can be observed on examination of the macula. These changes typically affect the RPE, and cause a ring of depigmentation to develop in the center of the macula called *bull's eye maculopathy*.

There appears to be minimal risk of toxicity for individuals using less than 6.5 mg/kg of hydroxychloroquine or 3 mg/kg of chloroquine for less than 5 years. Hydroxychloroquine has been prescribed typically at a dosage of either 200 or 400 mg/day, because of the tablet size, rather than on a per weight basis. A 200 mg daily dose will be relatively safe for all but extremely small individuals (less than 68 pounds or 31 kg, if of average build), but a daily dosage of 400 mg puts anyone under 135 pounds (62 kg) in the higher-risk category.

The baseline and subsequent eye examination includes Amsler Grid examination, Humphrey 10-2 visual field test, color vision test and color photographs of the retina. If a baseline examination is normal and dosages are at the relatively safe levels, screening during the next 5 years can be at the frequency of regular ophthalmic examinations. Annual screening during the first 5 years of usage is recommended only for individuals who are at higher risk because of their higher dosage, duration of use (more than 5 years), or other complicating factors (kidney or liver disease, obesity).

Reference: Recommendations on screening for chloroquine and hydroxychloroquine retinopathy - a report by the American Academy of Ophthalmology *Ophthalmology* 2002 Jul;109(7):1377-82.