The New Recommendations for Plaquenil Screening

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Revised Recommendations on Screening for Chloroquine and Hydroxychloroquine Retinopathy

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- Published February 2011 in Ophthalmology
- Update to previous recommendations published in 2002
- Testing strategies for earlier diagnosis
- New information regarding risk of toxicity.

Chloroquine, and Plaquenil (Hydroxychloroquine)

Why are patients taking these toxic medications?
Chloroquine
- Chloroquine discovered in 1934 by Bayer
- Initially felt to be too toxic for human use
- WWII clinical trials determined it to be an effective antimalarial.
- Now there is widespread resistance, and has largely been replaced by Mefloquine or Atovaquone/Proguanil (Malarone)
- Central America is now one of the few places with chloroquine sensitive Malaria.
- Also noted to improve symptoms in people with autoimmune inflammatory disorders.

Hydroxychloroquine
- Less toxicity with long term use
- Half Life = 1-2 Months
- Renal Excretion (vs. Hepatic for Chloroquine)
- Immunosuppressant
  - Inhibits immune cell function
- Uses:
  - Systemic Lupus Erythematosus
  - Rheumatoid Arthritis
  - Porphyria Cutanea Tarda
  - Post-Lyme Arthritis

Plaquenil Toxicity (Maculopathy)
- Epidemiology:
  - Prevalence: 6.8/1000 Users (Review of 4000 patients)
  - Highly dependent on duration of use
  - 2-3/1000 during first 5 years
  - ~1% at 5-7 years and continues to rise thereafter
  - Dose dependence unclear as most receive standard 400mg daily.
- Risk Factors:
- Symptoms:
- Signs:

* Evidence clearly supports this statement.
Plaquenil Toxicity (Maculopathy)

Epidemiology:

Risk Factors:

Symptoms:
- Blurry Vision
- Paracentral distortion/visual field defects
- Profound vision loss (advanced)

Pathophysiology

Signs:
- Bulls Eye Maculopathy
- Paracentral distortion on amsler grid
- Color deficits
- Paracentral VF defects best seen on 10-2 Sita Fast program
  - Loss of inner segment-outer segment junction on SD-OCT
  - Decreased amplitude of central/paracentral rings on multifocal ERG
  - Paracentral increase in Fundus Autofluorescence (FAF) intensity
  - Reduction in Near Infrared Autofluorescence Intensity

*Newer modalities incorporated into 2011 AAO screening recommendations

Multifocal ERG, fundus autofluorescence (FAF), near-infrared autofluorescence (NIA), spectral domain OCT (SD-OCT) in different stages of chloroquin (CQ) retinopathy.

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Plaquenil Toxicity—Early Diagnosis

- 61 year old female w/ RA
- 10 year history of plaquenil use.
- Symptoms: Glare
- BCVA: 20/20 OU
- Subtle pigmentary changes
- Paracentral VF defects on 10-2

Timeline of Screening

- Baseline Examination within 1 year of starting Plaquenil
- Yearly examinations starting at 5 years after initiating therapy

Recommended Screening

- Ocular Examination (low sensitivity)
- Automated visual field (White 10-2)
- At least one objective screening test
  - SD-OCT
  - mfERG
  - FAF

Not Recommended for Screening

- Fundus photography (Ok for baseline documentation)
- Time-Domain OCT (insufficient resolution)
- Fluorescein Angiography
- Full-field ERG (Low sensitivity and specificity)
- Amsler Grid (Subjective, only as adjunct)
- Color Testing (Subjective, only as adjunct)
- EOG (Low sensitivity)
Questions/Thank you.