# Chloroquine and Hydroxychloroquine Screening Procedures

### Risk

- Risk increases in the following:
  - After 5 years of use
  - Hydroxycholoroguine Daily dose >5.0mg/kg real weight
  - Cholorquine Daily dose >2.3 mg/kg real weight
  - Renal disease- subnormal glomerular filtration rate
  - Tamoxifen use
  - Preexisting macular disease
- Risk may be higher than previously believed as more sensitive testing employed (OCT, MERG)

## **Toxicity**

- Irreversible Toxicity as evidenced by perimacular retinal thinning, photoreceptor and RPF loss
- Early signs are loss of outer segment structural lines and increased parafoveal autofluorescence

## **Timeline**

- Baseline Examination within first year of use
- Annual Screening after 5 years of use if on acceptable doses without other risk factors

## **Recommended Screening Procedures**

#### **Ocular Exam**

Dilated Retinal Exam (low sensitivity)

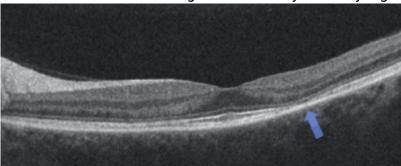
#### **Automated Visual Field**

- White 10-2
- Interpret with a low threshold for abnormality

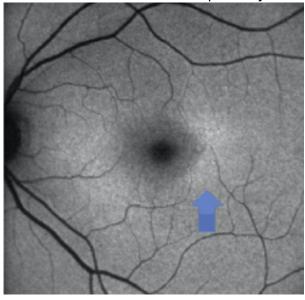
Retest if abnormalities appear

#### One or More Objective Tests (abnormalities may be before field loss)

- SD-OCT
  - Cross section of macula
  - localized thinning of parafoveal region especially the outer-segments and RPE structural lines
  - loss of the inner-/outer-segment line may be early sign



- mfERG
  - Especially in suspicious or unreliable visual field loss
  - Paracentral voltage reduction
- Fundus Autofluorescence
  - Increased autofluorescence possibly from accumulation of outersegment debris



# **Tests NOT recommended for screening**

- Fundus photography
- Time-Domain OCT
- Fluorescein Angiography- not proved to be more senstive than other tests
- Full-field ERG- may be useful in those with manifest toxicity to evaluate degree of damage

- Amsler grid
- EOG

Source: Ophthalmology 2016:123:1386-1394

drugs, jia

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