

Hydroxychloroquine Retinopathy Screening: Do the 2020 Revised Diagnostic Criteria Work?

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Background

Hydroxychloroquine (HCQ) is widely used for autoimmune conditions but causes retinal toxicity in some patients

The Royal College of Ophthalmologists (RCOphth) published screening guidelines and diagnostic criteria in 2018

- UK prevalence using this algorithm: **1.1-1.8%** ^{1, 2}
- Noted visual field testing at every visit was **time consuming** and had a **high proportion of inaccurate results**

RCOphth updated guidelines in 2020 with two key changes ³:

- Removed baseline testing before starting HCQ
- Visual field testing only triggered by abnormal imaging (SD-OCT/FAF), not routinely

No real-world prevalence data exist since the update; we audited our service to assess the new criteria

2018 RCOphth Guidelines				2020 RCOphth Guidelines [The ‘Short Circuit’ Logic]			
Anatomy	Function	Diagnosis	Outcome	Anatomy	Function	Diagnosis	Outcome
👍	👍	No retinopathy	Review 1 year	👍	-	No or possible	Review 1 year
👎	👍	Possible	Review 1 year	👎	-	Possible or definite	Needs field test
👍	👎	Possible	Review 1 year	👎	👍	Possible	Review 1 year
👎	👎	Definite	Report retinopathy	👎	👎	Definite	Report retinopathy

Methods

Service evaluation at St Thomas's Hospital, London

- Electronic patient reports of patients who had attended the HCQ Retinopathy Clinic between September 2023 and September 2025 (n = 2637)
- Patients assessed using the 2018 guidelines were excluded (n = 786)

1869 patients were screened using only the revised 2020 criteria

Results

Prevalence of definite HCQ retinopathy in our cohort:
23 / 1869 [1.23%]

Demographics of Patients with Definite HCQ Retinopathy

	Mean	SD	Median	Range
Age (years)	56.22	15.75	56.00	24 – 86
Duration of Treatment (years)	12.04	6.49	10.00	3 – 26
Dose of treatment (mg/kg)	4.11	1.35	3.85	1.82 – 6.56
eGFR (mL/min/1.73m²)	77.09	17.62	87.00	32 – 90

Table showing mean, standard deviation, median and range for age, duration of treatment, dose mg/kg and eGFR for **patients with definite HCQ retinopathy (n=23)**

Why This Matters

- Prevalence of **1.23%** observed from our large cohort of patients over 2 years
- First demonstration that the new 2020 RCOphth guidelines detect the **same proportion of patients** with retinopathy with **less burden on patients and services**
- Large prospective population-based studies would be beneficial to establish accurate prevalence rates and validate the long-term effectiveness of the revised 2020 screening approach

References:

¹Marshall E, Robertson M, Kam S, Penwarden A, Riga P, Davies N. Prevalence of hydroxychloroquine retinopathy using 2018 Royal College of Ophthalmologists diagnostic criteria. Eye. 2021;35:343–48.
²Alieldin RA, Boonarpa N, Saedon H. Outcomes of screening for hydroxychloroquine retinopathy at the Manchester Royal Eye Hospital: 2 years' audit. Eye. 2023 May;37(7):1410-1415.
³Hydroxychloroquine and chloroquine retinopathy: recommendations on monitoring. Published by The Royal College of Ophthalmologists, 2020.