Background The use of Hydroxychloroquine (HCQ) in Systemic Lupus Erythematosus (SLE) has been shown to decrease disease activity and all cause mortality. Retinal toxicity (RT) may limit its use and the pathogenesis of RT has not been fully established.

The aim of this study is to evaluate retinal toxicity in our SLE cohort.

Methods Our electronic SLE database (Jan 2014–June 2018) was evaluated. Patients fulfilling ACR 1997 criteria, with at least 1 year follow-up, at least 12 weeks of HCQ treatment and computerized visual field (CVF) study performed who suspended HCQ due to RT were included. Patients with other HCQ suspension causes (intolerance, hypersensitivity, muscular toxicity, skin rash) were excluded.

RT was defined as diminution in visual acuity and/or worsening in CVF below reference levels that required HCQ suspension or dose adjustment.

Other possible causes of retinal alteration (diabetes, arterial hypertension), cumulative dose of HCQ at the time of suspension, time of HCQ exposure and accrual damage by SLICC-DI at the time of suspension and at the last recorded visit were assessed.

Results 231 patients evaluated. 33 included. 10 (30%) reinitiated treatment at a later time, 5 with dose adjustment. HCQ suspension was definite in 23 (69.7%, 9.9% of the global population).

Patients with RT had mean age 44.5 (DS ±12.6) years; Ethnicity: Amerindian 6.06%, Caucasian 6.06% and Mestizo 87.8%; 12 (36.3%) had arterial hypertension and 2 (6.06%) diabetes.

Median Cumulative dose of HCQ at suspension was 576 gr (IQR 144–1008). 9 (27.2%) patients had cumulative dose >1000 gr and 13 (39.3%) >5 years of exposure.

Mean SLICC-DI at suspension was 0.8 (DS ±1,2) and mean SLICC-DI at last visit was 1,17 (DS ±1,7).

22 (70.9%) patients with CVF worsening were receiving HCQ>5 mg/kg (real weight) and 23 (74.1%) were receiving HCQ>6.5 mg/kg (ideal weight).

Conclusions We observed a similar frequency of HCQ suspension due to RT as reported in other studies. In our patients, there was no difference in RT between patients receiving <5 mg/kg (real weight) vs <6.5 mg/kg (ideal weight).

We found a higher frequency of RT in patients with cumulative dose of HCQ <1000 gr and <5 years of HCQ exposure. This might challenge the American Society of Ophthalmology recommendation of CVF after 5 years of exposure or >1000 gr of cumulative dose.

A rise in the SLICC-DI score was observed after HCQ discontinuation, reaffirming the role of HCQ therapy in SLE.

A limitation is that RT was defined by CVF and was not routinely assessed by higher complexity studies (OCT). As a strength, RT was studied in the Mestizo population of Argentina, the dominant ethnicity, which might not be fully represented in previous international studies.

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