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CORRESPONDENCE

Hydroxychloroquine retinopathy: screening and genetics

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To the Editor:

We welcome the data that Gunasekera and Gupta provide in their letter on monitoring for hydroxychloroquine (HCQ) retinal toxicity in response to the Royal College of Ophthalmologists' guidance and our published experience in setting up such a service together with some early results from University Hospital Southampton NHS Foundation Trust (UHS) [1]. The Royal College guidance on monitoring for retinal toxicity from hydroxychloroquine was based on extensive review of the existing dataset at the time up to the start of 2018 and was supported in addition to ophthalmologists by representatives from the specialities of both dermatology and rheumatology [2]. These suggested the prevalence of retinopathy is higher than was previously appreciated. The previous under-diagnosis of HCQ retinopathy also seems supported by the rising number of claims appearing in the courts for missed toxicity. It is however accepted that HCQ retinopathy can be challenging to diagnose in its early stages, potentially requiring serial follow-up in equivocal cases, and also that a final estimate on its prevalence may take time. Furthermore the pattern of toxicity is subject to genetic variability—many of the studies were from the United States with its heterogenous gene pool. Genetic factors have not been studied in this context in detail and cannot be excluded as a cause of disparities in prevalence between countries and regions of the same country. Some East Asian populations can even exhibit a different pattern of retinopathy.

Early toxicity can be subtle. Given the potential challenges in diagnosis of borderline toxicity multifocal ERG (mfERG) is of great assistance in deciding equivocal cases since unlike visual fields it is an objective physiological recording and this is reflected in the Royal College guidance. We have found at UHS that toxicity is higher than reported by Gunasekera and Gupta (who reported from the East of England), though may not be as high as in some other reports from the USA. In comparison with the east of England which is relatively rural the South-East and South Coast of England tends to be more ethnically diverse, further in the case of Southampton (a major port for 1000 s of years) there is likely to be a more heterogenous gene pool owing to immigration and inter-racial mixing. These factors all show how complex the epidemiology of HCQ toxicity might be and may account for regional variations in prevalence.

Finally the authors of the letter importantly note that there is no access at all to mfERG in their region of England, suggesting both an inequality in the availability of mfERG and that this inequality transcends regions of the country. Beyond its being a regional centre, additional factors at UHS which favoured mfERG being developed were that it is a large university teaching hospital offering all clinical specialties not only ophthalmology, use of mfERG for research trials, the eye department is one of the largest ophthalmology departments in the country with between 250 and 300 ophthalmic staff and the largest in the South-East region of England receiving referrals from both within the unit and outside—all additional factors that made it worth the while of the NHS Trust to offer mfERG services on-site. If monitoring for HCQ toxicity is to be enabled it is hoped that very big units similar to Southampton would develop mfERG in a cost-effective way for the provider to offer this service widely. Finally, it is worth bearing in mind that capacity to deal with retinal monitoring for HCQ toxicity can be managed by certain existing providers of retinal screening such as diabetic eye screening programmes, who in some regions of the country are making approaches in this field to relieve the burden on NHS capacity. This option does however necessitate clinical supervision by medical retina-trained

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ophthalmologists owing to the potential subtlety of early HCQ toxicity.

Compliance with ethical standards

Conflict of interest The authors declare no conflicts of interest

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