

## **Response to the effect of pharmacologic treatment of migraine on retinal vasculature (EJO-21-0036.R1)**

We appreciate Dr. Harvey's comments (1) on our case report about vascular changes during an episode of migraine with aura(2).

Since ocular vascular changes experienced by our patient were monocular, we believe it is unlikely that the patient's migraine treatment was their main cause. Nevertheless, we agree with Dr. Harvey on that a synergic phenomenon between amitriptyline and naproxen may have contributed to retinal oligemia.

Although optical coherence technology has been available for over a decade, very few studies have been published on the chronic consequences of migraine in the retinal vasculature(3), and fewer have studied auras during the acute phase(2, 4). This is probably the consequence of the narrow time window in which acute changes may be detected and might also be related to the fact that these patients are usually treated by general physicians and neurologists who do not have direct access to this technology.

The interactions between retinal and cortical neurons are complex and although retinal spreading depression has not been demonstrated in humans, it has been proposed as a possible mechanism in chickens (5). We hope that in the future prospective studies, recruiting a higher number of patients with migraine with aura could help to determine how common these changes are and on the effect of different treatment modalities.

### 4. Reference List

1. Harvey J. Response to: Acute monocular oligemia in a patient with migraine with aura demonstrated using OCT-angiography: A case report.
2. González-Martín-Moro J, Porta Etessam J, Pilo de la Fuente B, Fuentes Vega I, Contreras I. Acute monocular oligemia in a patient with migraine with aura demonstrated using OCT-angiography: A case report. *Eur J Ophthalmol*. 2020;1120672120984408.
3. Ascaso FJ, Marco S, Mateo J, Martínez M, Esteban O, Grzybowski A. Optical Coherence Tomography in Patients with Chronic Migraine: Literature Review and Update. *Frontiers in neurology*. 2017;8:684-.

4. Bingol Kiziltunc P, Atilla H. Vascular changes with optical coherence tomography angiography during aura of migraine: A case report. *Eur J Ophthalmol.* 2020;1120672119899900.
5. Wang Y, Li Y, Wang M. Involvement of CGRP receptors in retinal spreading depression. *Pharmacological reports : PR.* 2016;68(5):935-8.