


## CORRESPONDENCE



# Comment on: Disentangling the association between retinal non-perfusion and anti-VEGF agents in diabetic retinopathy

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Ayman G. Elnahry<sup>1</sup>  and Wael A. Yussuf<sup>1</sup>  
<sup>1</sup>Department of Ophthalmology, Faculty of Medicine, Cairo  
University, Cairo, Egypt. ✉email: [ayman\\_elnahri@hotmail.com](mailto:ayman_elnahri@hotmail.com)

**TO THE EDITOR:**

We read with interest a recent review article published by Chatziralli et al. in *Eye* regarding evaluation of the effect of anti-vascular endothelial growth factor (VEGF) agents on the macular perfusion of patients with diabetic macular oedema (DMO) using optical coherence tomography angiography (OCTA) [1]. First, we would like to congratulate the authors on their well-written and informative article. Recently, we also performed a systematic review on the same topic and reached a similar conclusion, namely, that the currently published studies reported conflicting results regarding this evaluation but generally found no change or worsening of macular perfusion following treatment despite functional improvement [2]. Several large clinical trials have found no worsening or even improvement of macular perfusion using anti-VEGF for DMO, but these studies used fluorescein angiography (FA) and depended on human graders [3]. OCTA is a relatively new imaging modality that allows objective assessment of macular perfusion in greater detail compared to FA. Furthermore, OCTA is not influenced by dye leakage or macular xanthophyll which allows it to be better suited for this evaluation [2].

Vessel-density-based OCTA metrics, the main method of macular perfusion assessment in these studies, however, could be an insensitive indicator of small macular perfusion changes. Indeed, in a study by Alagorie et al, there was a decrease in the central macular thickness (CMT) below what would be considered a normal CMT following anti-VEGF treatment for patients with proliferative diabetic retinopathy without DMO despite no significant change in macular perfusion by OCTA [4]. The authors concluded that there is a possibility of reduction in flow or velocity that was below the detection sensitivity of OCTA. In a recent multicentre study that evaluated the effect of anti-VEGF injections for DMO on mean macular intercapillary area (ICA), a non-vessel density based OCTA metric, there was no change in mean macular ICA following 3–6 monthly anti-VEGF injections [5]. This indicates that anti-VEGF injections may neither worsen nor improve macular perfusion in the short-term. Currently, we are conducting two clinical trials (NCT04674254 and NCT04991350) that we hope will shed further light on the effect of anti-VEGF treatment on the macular perfusion of patients with diabetes.

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**AUTHOR CONTRIBUTIONS**

AGE conceived the idea of the letter, searched the literature, and wrote the manuscript. WAY searched the literature and revised the manuscript. Both authors read and approved the final version of the manuscript.

**COMPETING INTERESTS**

The authors declare no competing interests.

**ADDITIONAL INFORMATION**

**Correspondence** and requests for materials should be addressed to Ayman G. Elnahry.

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