

# Comment on: "Ganglion cell complex and retinal nerve fiber layer thickness in gestational diabetes mellitus"

Dear Editor,

In the response to the article titled "Ganglion cell complex and retinal nerve fiber layer thickness in gestational diabetes mellitus" published in your esteemed journal, which is a well thought off and written paper, I would like to raise a few points regarding this study.

In the article, we have information that peripapillary and macular retinal nerve fiber layer, ganglion cell layer thickness were decreased in pregnant females with gestational diabetes mellitus compared to healthy pregnant females, which might be the early retinal neurodegenerative alteration in gestational diabetes.<sup>[1]</sup>

There is evidence demonstrating that there are manifestations of neurodegeneration in patients with diabetes at times before microcirculatory manifestations, such as ganglion cell apoptosis, glial activation, and reduction in the thickness of the nerve fiber layer.<sup>[2]</sup> Thus, a retinography examination does not exclude that neurodegeneration is already present in a diabetic patient, demonstrating the importance of the optical coherence tomography examination in the follow-up of these patients. Excitotoxicity mediated by glutamate accumulation increases the production of oxidative and neuroinflammatory factors that contribute to the neurodegeneration of ganglion cells in the patient with diabetes.<sup>[3]</sup> The reasons that facilitate the accumulation of glutamate in patients with diabetes include increased production of glutamate by cells glial cells due to loss of the enzyme glutamine synthetase by Müller cells, reduced ability of the retina to oxidize glutamate, and reduced retinal glutamate uptake by glial cells. There is also a reduction in the production of neuroprotective factors such as the neurotrophic factor derived from the retinal pigment epithelium, somatostatin, and erythropoietin.<sup>[4]</sup> Nervous alterations can occur even in the absence of pericyte lesions, previously considered the first signs of diabetic retinopathy.<sup>[5]</sup>

Therefore, neuroprotective treatment research may be useful in the treatment of diabetic retinopathy. This could avoid more invasive treatment in later stages of diabetic retinopathy, which uses intravitreal injections of antiangiogenics and laser photocoagulation of the retina.

### Data availability statement

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

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Nil.

### Conflicts of interest

The authors declare that there are no conflicts of interests of this paper.

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