Sleep and Breathing (2019) 23:907–908
https://doi.org/10.1007/s11325-019-01817-3

NEUROLOGY • LETTER TO THE EDITORS

The association between retinal thickness variations and restless leg syndrome (RLS)

Lorenzo Ferro Desideri [1] · Fabio Barra [1,2] · Simone Ferrero [1,2]

Received: 24 October 2018 / Revised: 31 October 2018 / Accepted: 23 February 2019 / Published online: 18 March 2019

To the Editor,

We read with great interest the article "Do you have restless leg syndrome? I understood from your eyes" recently published by Koze Ozlece et al. in your journal [1]. In this study, the authors measured the retinal thicknesses, including the retinal nerve fiber layer (RNFL) thickness and parafoveal ganglionar cell complex (GCC) thickness in 33 patients with restless leg syndrome (RLS) comparing their findings with measurements in healthy control subjects. The authors reported a significant thinning of several retinal quadrants in both the RNFL and the GCC in the RLS group compared to controls [1].

Although the authors should be congratulated for the prospective study design and for the significant results revealed in the RNFL and the GCC thicknesses in the patients with RLS, we would like to point out some methodological concerns with this study.

First, the authors reported that they performed a complete ophthalmological examination, including best corrected visual acuity (BCVA), ocular tonometry, slit-lamp examination, and fundus examination. However no results on BCVA, intraocular pressure (IOP), and fundus examination were reported in either group. In this regard, it is well known that IOP is a dynamic variable which can be responsible for GCC and RNFL damage even in subjects without glaucoma, being subjected to diurnal changes affecting retinal thickness [2]. Moreover, the authors did not clarify if they measured by ocular biometry important parameters such as axial length which has been demonstrated to represent an independent risk factor modifying RNFL thickness. In line with this, a prospective study showed the inversely proportional relationship between axial length and RNFL in healthy subjects [3]. Given this evidence, we believe that the authors should have provided more data obtained from the ophthalmic examination, and they should have specified whether or not they measured independent risk factors such as axial length.

Secondly, the authors did not report if in the exclusion criteria, beside a medical history of glaucoma or retinopathies, also included important systemic diseases such as systemic hypertension, diabetes, or smoking, which may have behaved as confounding factors. In this regard, an inverse relationship has been shown between systemic hypertension and macular thickness in different retinal quadrants [4]. Additionally, it is known that subjects who smoke have a significantly reduced RNFL thickness compared with healthy nonsmokers [5]. We believe that initial screening for common systemic diseases such as diabetes or systemic hypertension and the evaluation of smoking status should have been performed by the authors in order to rule out important and common independent risk factors in the study population.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

✉ Lorenzo Ferro Desideri
lorenzoferrodes@gmail.com

[1] Department of Neurosciences, Rehabilitation, Ophthalmology, Genetics, Maternal and Child Health (DiNOGMI), University of Genoa, Genoa, Italy

[2] Academic Unit of Obstetrics and Gynecology, Ospedale Policlinico San Martino, Largo R. Benzi 10, 16132 Genoa, Italy

References

1. Kose Ozlece H, Solmaz V, Ozal SA, Celik Y (2018) Do you have restless leg syndrome? I understood from your eyes. Sleep Breath Schlaf & Atmung. https://doi.org/10.1007/s11325-018-1740-5
2. Sit AJ (2014) Intraocular pressure variations: causes and clinical significance. Can J Ophthalmol 49(6):484–488

3. Oner V, Ozgur G, Turkyilmaz K, Sekeryapan B, Durmus M (2014) Effect of axial length on retinal nerve fiber layer thickness in children. Eur J Ophthalmol 24(2):265–272
4. Kong M, Kwun Y, Sung J, Ham DI, Song YM (2015) Association between systemic hypertension and macular thickness measured by optical coherence tomography. Invest Ophthalmol Vis Sci 56(4): 2144–2150
5. Dervisogullari MS, Totan Y, Tenlik A, Yuce A, Guler E (2015) Effect of smoking on retina nerve fiber layer and ganglion cell-inner plexiform layer complex. Cutan Ocul Toxicol 34(4):282–285