Clinical Ophthalmology

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LETTER

Dysthyroid Optic Neuropathy and Barrett's Index – Revisiting the Cutoffs [Letter]

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Dear Editor

Dysthyroid optic neuropathy (DON) is a sight-threatening complication that occurs in 5% to 8% of the cases of Graves orbitopathy (GO)[1]. The impairment of axoplasmic flow in the optic nerve by compression from swollen extraocular muscles at the orbital apex and shearing of axons or blood supply due to stretching of the optic nerve in marked proptosis can result in DON[1].

Given the reversibility of changes in early DON with prompt intervention, the authors have explored the diagnostic ability of Barrett's index (BI) and intracranial fat prolapse in diagnosing DON in its inception[2]. The diagnostic criteria used in the study did not include concurrent changes in the visual field (VF) or contrast sensitivity. However, the recent literature argues for the inclusion of VF indices in the diagnosis of DON[3]. The current study shows visual field defects of –2 dB in the DON group and –8 dB in the no DON group[2]. Also, a logMAR best corrected visual acuity (BCVA) of 0.3 was assigned to the no DON group. The overlap of the decibel range of mean deviation of visual field loss and BCVA between the two groups suggests a potential error in group allocation. Though cases with visual loss from other eye diseases constituted the exclusion criteria, a high prevalence of 27.4% (23/84) in the DON group is unexplainable, especially with GO duration being less than 6 months. It would have been desirable to study the intraocular pressure changes as 43.5% (10/23) of cases in the DON group had a pale disc.

Early DON shows a blue-yellow color defect. The reported sensitivity of the tritan measure in DON was 98.9% (95% CI 94.1–99.9%) in comparison to the proton measure of 61.9% (95% CI 51.2–71.8%)[4]. The Farnsworth-Munsell 100-hue test is indicated for the diagnosis of tritan defects, while the pseudoisochromatic tests like the Ishihara plates are useful for advanced DON cases[5]. As tritan deficiency even without visual loss may occur in DON, the use of Ishihara plates in the current study could have led to missing out on early DON and allocation in the no DON group.

The mean BI of 47.68 ± 12.52% in the DON group[2] suggests the presence of 17.3% cases with a BI value >60.2% in the DON group. This is in contrast to the study population of Barrett et al, where two-thirds of the DON cases had BI > 70%[3]. Since the study criteria excluded the cases with disease duration >6 months, the TED cases with the fibrotic disease were possibly missed out. This could have created a selection bias, reducing the external validity of the study. Also, the inadvertent inclusion of no DON cases in the DON group, in the backdrop of an unexpectedly high prevalence of DON, could have led to a false lowering of Barrett's index in the DON group.

Therefore, to conclusively validate the imaging clues for the identification of early DON, the collation of multicentric data from different ethnicities with sequential follow-up is suggested.

Disclosure

The authors report no conflicts of interest in this communication.

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Received: 8 November 2022
Accepted: 10 November 2022
Published: 14 November 2022

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https://doi.org/10.2147/OPTH.S396665