Comments on "A Prospective Observational Study on Changes in Intraocular Pressure and Iridocorneal Angle Following the Use of Escitalopram and Amitriptyline"

We read with interest the article by Mandal et al.[1] It is a pertinent study on the effect of escitalopram and amitriptyline on intraocular pressure (IOP) and iridocorneal angle.

Escitalopram and amitriptyline are commonly used antidepressants.[2] The authors choosing two drugs belonging to different classes of antidepressants was relevant as it would help choose a drug for patients predisposed to angle closure.

However, we feel the study methodology could have been more rigorous. Firstly, it needs to be considered that IOP is a dynamic variable. Various factors, including the time of the day or the position of the patient, are known to alter IOP.[3] An average (mean) of multiple readings of IOP is an accepted practice.[4,5] Secondly, slit lamp gonioscopy, although useful in the clinical setting, is less useful in a research setting due to poor reproducibility.[6] Wide inter-observer variations exist between general ophthalmologists and glaucoma specialists in assessing gonioscopic findings.[7] Further, gonioscopy assessment is affected by testing conditions, such as ambient illumination.[8] Hence, reporting the average of multiple IOP readings, employing uniform testing conditions, and ensuring agreement between observers would have been useful.

Pupillary dilatation resulting from the anticholinergic action or increased serotonin levels has been proposed as a possible mechanism for the raised IOP caused by selective serotonin reuptake inhibitors.[9] Further, the authors could have employed imaging techniques, such as anterior segment optical coherence tomography and ultrasound biomicroscopy, to assess the changes in the iridocorneal angle.[10,11] Hence, both monitoring the pupillary dilatation and imaging techniques could have helped in understanding the mechanism underlying the variations in the IOP following the psychotropic intake.

Psychological stress can elevate IOP even in healthy individuals.[12] Besides, anxiety and depression can increase the risk of progression of glaucoma.[13] Hence, it would have been worthwhile to rate the severity of anxiety and depression symptoms in the patients, to see if that was a confounding factor to account for the differences in IOP.

The risk of an acute IOP spike would depend on the configuration of the angle at baseline. In an Asian study, a narrower angle width, observed through gonioscopy, was the only clinical parameter identified for a significant increase in the IOP after pupil dilation.[14] It is unlikely that an eye with a wide open angle would go into acute angle closure. Hence, reporting the IOP and angle changes at the baseline would help ascertain whether angles that were narrower at the baseline showed more significant variations.

Overall, this study is a significant contribution. However, consideration of the points we raised would have further strengthened it.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Harkishan Mamtani https://orcid.org/0000-0001-6932-3834

Nidhi Mamtani[1], Harkishan Mamtani[2], Harish Thippeswamy[2], Ronnie Jacob George[1] and Santosh K. Chaturvedi[2]

[1]Dept. of Glaucoma, Vision Research Foundation, Sankara Nethralaya, Chennai, Tamil Nadu, India. [2]Dept. of Psychiatry, National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, Karnataka, India.

Address for correspondence:

Harkishan Mamtani, Dept. of Psychiatry, National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, Karnataka 560029, India. E-mail: harkishanmamtani@gmail.com.

Submitted: 06 Feb. 2023
Accepted: 04 Mar. 2023
Published Online: 12 Apr. 2023

References

1. Mandal S, Acharya R, Mallik N, et al. A prospective observational study on changes in intraocular pressure and iridocorneal angle following the use of escitalopram and amitriptyline. *Indian J Psychol Med* 2023; 45: 38–42.
2. Tripathi A, Avasthi A, Desousa A, et al. Prescription pattern of antidepressants in five tertiary care psychiatric centres of India. *Indian J Med Res* 2016; 143: 507.
3. Sit AJ. Intraocular pressure variations: Causes and clinical significance. *Can J Ophthalmol* 2014; 49: 484–488.
4. Baskaran M, Kumar RS, Friedman DS, et al. The Singapore asymptomatic narrow angles laser iridotomy study: Five-year results of a randomized controlled trial. *Ophthalmol* 2022; 129: 147–158.
5. Ederer F, Gaasterland DE, Sullivan EK, et al. The advanced glaucoma intervention study (AGIS): 1. Study design and methods and baseline characteristics of study patients. *Control Clin Trials* 1994; 15: 299–325.
6. Porporato N, Baskaran M, Husain R, et al. Recent advances in anterior chamber angle imaging. *Eye (Lond)* 2020; 34: 51–59.
7. Malbin B, Shukairy A, Hughes BA, et al. Gonioscopy practice patterns. *Investig Ophthalmol Vis Sci* 2016; 57: 2598.
8. Palmberg P. Shedding light on gonioscopy. *Arch Ophthalmol* 2007; 125: 1417–1418.

9. Razeghinejad MR, Pro MJ, and Katz LJ. Non-steroidal drug-induced glaucoma. *Eye (Lond)* 2011; 25: 971–980.
10. Porporato N, Baskaran M, and Aung T. Role of anterior segment optical coherence tomography in angle-closure disease: a review. *Clin Experiment Ophthalmol* 2018; 46: 147–157.
11. Ishikawa H and Schuman JS. Anterior segment imaging: ultrasound biomicroscopy. *Ophthalmol Clin North Am* 2004; 17: 7–20.
12. Abe RY, Silva TC, Dantas I, et al. Can Psychologic stress elevate intraocular pressure in healthy individuals? *Ophthalmol Glaucoma* 2020; 3: 426–433.
13. Shin DY, Jung KI, Park HYL, et al. The effect of anxiety and depression on progression of glaucoma. *Sci Rep* 2021; 11: 1–10.
14. Lavanya R, Baskaran M, Kumar RS, et al. Risk of acute angle closure and changes in intraocular pressure after pupillary dilation in Asian subjects with narrow angles. *Ophthalmol* 2012; 119: 474–480.

HOW TO CITE THIS ARTICLE: Mamtani N, Mamtani H, Thippeswamy H, George RJ and Chaturvedi SK. Comments on "A Prospective Observational Study on Changes in Intraocular Pressure and Iridocorneal Angle Following the Use of Escitalopram and Amitriptyline". *Indian J Psychol Med.* 2023;45(3):323–324.

ACCESS THIS ARTICLE ONLINE
Website: journals.sagepub.com/home/szj
DOI: 10.1177/02537176231164741

Response to the comments on "A Prospective Observational Study on Changes in Intraocular Pressure and Iridocorneal Angle Following the Use of Escitalopram and Amitriptyline"

We thank the reviewers who wrote the letter for taking an interest in our article.[1] We are grateful that they felt our study was pertinent to the context. We understand that their criticism is in the following aspects. Firstly, the potential for change in intraocular pressure (IOP) has not been adequately considered. Secondly, using slit lamp gonioscopy may lead to inter-rater variability of results. Thirdly, they suggested using other modalities like anterior segment optical coherence tomography (OCT) and ultrasound biomicroscope (UBM) to document iridocorneal changes better. Finally, they argued that reporting the IOP and angle changes at the baseline would have helped ascertain whether angles that were narrower at the baseline showed more significant variations.

Firstly, we agree that IOP is a dynamic variable. We could have considered mean IOP, which would have overcome the diurnal variation in IOP. However, given the patients' underlying psychiatric condition, multiple IOP measurements across the three timeframes were logistically not feasible. We regret this fact. Secondly, we agree that gonioscopy interpretation has a high inter-observer variability. But there is no alternate test to replace it with less inter-observer variability. The gonioscopy interpretation was done by a competent and experienced glaucoma specialist in dark rooms and reconfirmed by another one independently. In case of any discrepancy in interpretation, we took the opinion of a third glaucoma expert, who was not the author of the manuscript. We also agree that anterior segment OCT and UBM could have been a good complementary modality for studying the iridocorneal changes. However, those facilities were not available and thus were not considered. Finally, we endorse that the baseline IOP and findings of gonioscopy were depicted in **Table 2** of the manuscript. However, whether angles that were narrower at the baseline showed more significant variations was out of the scope of this study because the inclusion criteria mandated that the IOP and iridocorneal angles be within the normal limits, to ensure homogeneity in the study group.

To conclude, we found the critical comments from the reviewers very enriching. However, this research was conducted in resource-restricted settings, leading to logistical limitations. Further studies that wish to invest their efforts in this avenue will benefit from the constructive feedback of the reviewers.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

ORCID iDs

Nitu Mallik https://orcid.org/0000-0002-5346-3493
Arghya Pal https://orcid.org/0000-0002-5887-1971

Shaswata Mandal[1], Rudraprasad Acharya[1], Nitu Mallik[1], Sneha Jain[2], Asim Kumar Ghosh[2], Malay Kumar Ghosal[1] and Arghya Pal[3]

[1]Dept. of Psychiatry, Medical College and Hospital, Kolkata, West Bengal, India. [2]Dept. of Ophthalmology, Medical College and Hospital, Kolkata, West