Scientific Program Research Abstracts

Which Central Visual Field Loss Parameters Best Reflect Vision-related Quality of Life in Glaucoma? Helen Kee (OD? FAAO?)

Abstract

Purpose

Prior studies have shown that 10-2 and 24-2 visual field (VF) summary metrics (mean deviation [MD] and pattern standard deviation [PSD]) are associated with vision-related quality of life (Vr-QOL) in glaucoma. However, little is known regarding how more specific types of VF metrics are related to Vr-QOL. Accordingly, this study was designed to investigate whether more specific variables focused on breadth and depth of 10-2 and 24-2 abnormalities are better associated with Vr-QOL compared to standard 24-2 and 10-2 VF summary metrics.

Methods

Subjects for this investigation were enrolled in a longitudinal glaucoma research study at the Albuquerque VA Medical Center and all provided informed consent. Participants for this investigation were diagnosed with primary open-angle glaucoma (POAG) or glaucoma suspect (GS): POAG subjects had glaucomatous optic neuropathy with repeatable VF loss while GS subjects had IOP>21 mm Hg and/or an optic nerve appearance that was suspicious for glaucoma but without repeatable VF loss. Vr-QOL was measured using the clinician-administered NEI Visual Functioning Questionnaire-25 (NEI-VFQ-25) survey, and cumulative Vr-QOL scores were utilized in statistical analyses. We recorded MD and PSD for 24-2 and 10-2 VF tests, number and depth of abnormal 10-2 points on total deviation and pattern deviation plots, and number and depth of repeatable abnormal pattern deviation points within the central 10 degrees of the 24-2 VF test. This approach resulted in 12 separate central VF parameters. Relationships between each central VF loss parameter and Vr-QOL scores were then analyzed and compared.

Results

One hundred seventy-three subjects (104 POAG, 69 GS) were analyzed; results for right and left eyes were similar, so only right eye data is reported. Median (interquartile range) 24-2 and 10-2 MD values for all right eyes were: -1.26 (-3.98, 0.22) dB and -0.34 (-2.81, 0.59) dB respectively. Vr-QOL cumulative scores were significantly correlated with all 12 central VF metrics investigated in this study with correlations ranging from 0.201 to 0.374. The strongest correlations between central VF loss parameters and Vr-QOL were found for 10-2 MD (r = 0.368) and the number of abnormal points within the central ten degrees of the 24-2 pattern deviation plot (r = 0.374).

Conclusion

Central visual field loss was significantly linked to Vr-QOL score in this study, regardless of how it was quantified on 10-2 and 24-2 VF tests. This relationship was best captured, however, by 10-2 MD and number of repeatable abnormal points within the central 10 degrees of the 24-2 test. Considering how similar the correlations were between these two parameters and Vr-QOL, either parameter appears to be a valid indicator of Vr-QOL in glaucoma.