COMPARISON OF VISUAL FIELD PROGRESSION ALGORITHMS

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Purpose. To evaluate the level of agreement between three currently available progression algorithms and global parameters for standard perimetry. **Methods.** 64 glaucoma and suspect patients enrolled in a longitudinal study who had ≥ 4 reliable visual fields (VF) were included. The four VFs were separately analyzed by the Glaucoma change probability (GCP) analysis, the Advanced Glaucoma Intervention Study (AGIS) algorithm, the Collaborative Initial Glaucoma Treatment Study (CIGTS) algorithm, and changes in MD and CPSD. The average score of the first two baseline VFs was subtracted from the last two VFs. This difference score was used to evaluate agreement between the different algorithms. **Results.** Mean follow-up was 5 years (range: 2-10 years). The highest correlation coefficient was found between AGIS and CIGTS ($r^2 = 0.82$, $p < 0.0001$) and AGIS and MD with an $r^2 = 0.71$ ($p < 0.0001$, while the lowest was between GCP and CPSD ($r^2 = 0.28$, $p < 0.0001$) Also, baseline VFs were divided into a normal (n=46) and an abnormal group (n=18) using the Ocular Hypertension Treatment Study criteria. The difference scores between the two groups were not statistically significant for any algorithm. ($p = 0.23$-0.65). **Conclusion.** These results demonstrate that there is variability among the different algorithms for measuring the magnitude of visual field change. More study is needed to determine which algorithm is best for identifying change given the purpose under study. None. NIH EY08208, EY11008, EY11158, & Glaucoma Research Foundation.