Influence of cycloversions induced by head tilt on scanning laser polarimetry parameters

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OBJECTIVE: To study the influence of cycloversions induced by head tilt on parameters of scanning laser polarimetry. METHODS: Five left and five right eyes of 9 normal subjects were measured in seven different head tilt positions by one examiner using a scanning laser polarimeter (Nerve Fiber Analyzer, NFA II, LDT Inc., San Diego, Calif., USA). Images were acquired for the following head tilt positions: upright, 10, 20, 30 degrees to the right, and 10, 20, 30 degrees to the left. For each position five to eight images of the peripapillary area were recorded. Objective cycloversions were determined trigonometrically on the fundus pictures provided by the scanning laser ophthalmoscope. Parameters acquired for different head positions were compared using a Friedmann's two-way analysis of variance. RESULTS: Average objective cyclodeviations were 5.9 degrees for the 10 degrees head tilts, 11.2 degrees for the 20 degrees head tilts, and 18.9 degrees for the 30 degrees head tilts. Head tilts to the right in left eyes and to the left in right eyes (both corresponding to an incycloposition) induced a significant increase in several parameters (p < 0.05). Head tilts to the left in left eyes and to the right in right eyes (both corresponding to an excycloposition) showed no influence on parameters (p > 0.05). CONCLUSIONS: Ocular incycloposition has a significant influence on several scanning laser polarimetry parameters. Therefore, evaluation is limited in patients having an incyclorotation of the nonfixating eye with the head in an upright position or in patients having a head tilt inducing an incyclorotation.

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