

The Effects of Optic Nerve Head Tilt on Visual Field Defects in Myopic Normal Tension Glaucoma: The Inter-eye Comparison Study

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PURPOSE: To evaluate whether optic nerve head (ONH) tilt has relations with the visual field (VF) defect in myopic normal tension glaucoma (NTG).

METHODS: Comparisons of variables were performed between less and more advanced VF defect groups in bilateral myopic NTG. Vertical, horizontal, maximal ONH tilt angles and angular location of maximal ONH tilt were measured using fundus photography and spectral-domain (SD) optical coherence tomography (OCT). Logistic regression analysis was performed to evaluate variables associated with more advanced VF defect in bilateral myopic NTG.

RESULTS: 112 patients who have bilateral myopic NTG were included. Significant correlation was found between horizontal ONH tilt angle and angular location of maximal ONH tilt ($R=0.45$, $P<0.001$). In logistic regression analysis, a larger number of medications, greater horizontal ONH tilt and greater angular location of maximal ONH tilt were associated with more advanced VF defect in myopic NTG ($P=0.004$; $P=0.014$; $P=0.037$, respectively). The location of VF defect was associated with the horizontal ONH tilt direction and angular location of maximal ONH tilt ($\kappa=0.63$, $P<0.001$; $\kappa=0.48$, $P<0.001$, respectively).

CONCLUSION: The horizontal ONH tilt and angular location of maximal ONH tilt correlated with the severity and location of VF defects in myopic NTG eyes.

J Glaucoma. 2019 Jan 7. doi: 10.1097/IJG.0000000000001182

PMID: 30624389