Letters

Comparison of Risk Factor Profiles for Primary Open-Angle Glaucoma Subtypes Defined by Pattern of Visual Field Loss: True Risk Factors or Arbitrary Definition?

We read with interest the article by Kang et al.[1] The authors claim that primary open-angle glaucoma (POAG) with early paracentral visual field (VF) loss has distinct as well as common determinants compared to POAG with peripheral VF loss. In particular, body mass index was more inversely associated with the POAG paracentral VF loss subtype than the peripheral VF loss, as was smoking. Non-heterogeneous adverse associations with both of the POAG subtypes were observed with glaucoma family history, diabetes, African heritage, greater caffeine intake, and higher mean arterial pressure. Although the sample size is considerable and statistical analysis sound, we felt several points needed further clarification before the conclusions can be substantiated.

The study is described as a prospective population-based study, but in fact, it is actually a retrospective study of two prospectively followed cohorts of nonrepresentative populations consisting predominantly of health professionals. Furthermore, the two cohorts are unbalanced in sample size.

With regard to methodology and data collection, more detail about exclusion criteria are needed. There is a lack of detail about the eye examination, in particular intraocular pressure measurement (baseline and throughout the study time) and VF parameters (type of machine, test strategy, frequency of testing, deviation allowed from protocol) are missing. Bias may have been introduced by the considerable proportion of patients that were excluded from the final analysis, as well as the limitations of self-reporting.

The conclusions of the paper are interesting; however, to establish true cause and effect, the definition of paracentral VF defect should not have overlapped with peripheral VF defect and should have followed a predefined international glaucoma guideline. Furthermore, the authors do not provide absolute and averaged values for the VF mean deviation parameters in the two groups. Given the arbitrary definitions for the paracentral and peripheral defect groups, it is likely that the former group simply has more advanced loss at diagnosis. Thus, the conclusions of the study may relate as much to associations of later diagnosis versus earlier diagnosis as they do to paracentral versus peripheral visual field loss.

Published studies are divided as to the effect of body mass index and cigarette smoking as risk factors for POAG.[2-6] The paper by Kang et al.[1] provides valuable information about these potential risk factors and attempts to differentiate among risk factors specific to paracentral as well as peripheral glaucomatous visual field defects. However, given the potential impact of a nonrepresentative population, case ascertainment by self-report, exclusions, and arbitrary pheotypic clasification, further studies in the subject are required.

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