

Incident Open-Angle Glaucoma and Ocular Perfusion Pressure

The purpose of this letter is to provide corrections to a recent paper from the Rotterdam Eye Study,¹ which evaluated the relationship between incident open-angle glaucoma (OAG) and ocular perfusion pressure (OPP). After adjustment for intraocular pressure (IOP), the researchers failed to find significant associations with OPP, concluding that the positive results of previous reports may be due to nonadjustment for IOP. Supporting this premise, the Discussion section noted that studies with adjustment for IOP also had nonsignificant associations with mean OPP, including the Barbados Eye Study and the Early Manifest Glaucoma Trial.

This statement on the Barbados data is incorrect, as it is based on analyses that were not adjusted for IOP and did not evaluate mean OPP; those analyses, based on OAG prevalence, yielded significant associations with diastolic OPP.² Subsequent Barbados reports, in which data were adjusted for IOP and were based on 4- and 9-year incidences,^{3,4} seem most relevant to the Rotterdam incidence results, but were not mentioned. These reports on the Barbados incidence data documented strong associations with systolic, diastolic, and mean OPP,^{3,4} both before and after IOP adjustment. As an additional clarification, the IOP-adjusted analyses from the Early Manifest Glaucoma Trial revealed significant relationships between OAG progression and systolic OPP.⁵ The results of those longitudinal studies, therefore, are not consistent with the Rotterdam report.

In addition to their diverse populations and research designs, differences in OPP results among studies could be due to many reasons (e.g., the Rotterdam OAG criteria were based only on visual field defects, while the Barbados criteria required both field defects and disc damage). Furthermore, we have an incomplete understanding of vascular factors in OAG and how to best evaluate the role of OPP.⁶ The investigations conducted by the Rotterdam Study were thorough. However, given the oversights noted and the complexity of OPP assess-

ment,⁶ it seems prudent to temper their conclusion that the link between OPP and OAG reported by others may be an "artifact" from lack of IOP adjustment.

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