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Factors Associated with Optic Disc Hemorrhages in Glaucoma

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Purpose: To evaluate factors associated with optic disc hemorrhages (ODHs) in patients with open-angle glaucoma and the comparative level of IOP in which these ODHs were observed. Methods: We reviewed charts of a cohort of open-angle glaucoma patients who have been participating in two prospective studies at our Department. The association between ODHs and various patient-related (diabetes, systemic hypertension, heart disease, hypercholesterolemia, migraine, hypothyroidism, use of platelet antiaggregant agents) and eye-related variables (mean and range of intraocular pressure, refractive error and severity of disease) was investigated employing multivariate “time-to-event” analyses. To determine the influence of the level of intraocular pressure (IOP) on the occurrence of ODHs, we compared the IOP at the time the first ODH was noted to the mean IOP of the previous 3 visits. As a control, a similar analysis was performed on the same eyes using a randomly selected visit prior to the occurrence of the first ODH. Results: Fifty eyes of 38 (28%) patients had one or more ODHs during the follow-up period. ODHs were associated with presence of diabetes (hazard ratio, 4.43; 95%CI = 1.8 to 10.50, P = 0.001) and use of aspirin (hazard ratio, 2.30; 95%CI = 1.2 to 4.6, P = 0.019). The IOP at the time of the first ODH was on average 1.4 mmHg lower than the mean IOP of the 3 previous visits (95%CI = -2.2 to -0.6 mmHg, P < 0.001), while in the control analysis the respective value was 0.3 mmHg lower (95%CI = -1.0 to 0.5, P = 0.410). Conclusion: ODHs were associated with diabetes and aspirin use and were observed at relatively lower IOP during follow-up.