Disc hemorrhages in an urban South Korean population: prevalence and risk factors
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Purpose: This study was performed to estimate the prevalence of disc hemorrhages (DHs) and evaluate its related risk factors in an urban South Korean population.

Methods: The study design was prospective cohort study from the Health Screening Center of Kangbuk Samsung Hospital. Subjects who underwent health screening from August 2012 to July 2013 were enrolled in this study and all subjects agreed to participate in the cohort study. All of the fundus photographs were first reviewed by two ophthalmologic doctors (SHS and HSP) and confirmed by two glaucoma specialists (JMK and CKY). In addition to fundus photographs, systemic examinations, sociodemographic and behavioral characteristics questionnaires were administered to each subjects. Eyes with DH were assigned according to whether or not accompanied by retinal nerve fiber layer (RNFL) defects. DHs were divided into four types according to the proximal location (lamina cribrosa, cup margin, disc rim, and peripapillary types) as well as the quadrant location (inferotemporal, superotemporal, inferonasal, and superonasal).

Results: Fundus photographs were available for 328,058 eyes of 164,029/169,208 (96.94%) subjects with an age of 20+ years. The prevalence of DHs was 226/164,029 (0.14%; 95% confidence interval (CI), 0.12-0.16) per subject and 233/328,058 (0.07%; 95% CI, 0.06-0.08) per eye. Prevalence of DHs increased from 0.03% (95% CI, 0.00-0.06) in the age group of 20-29 years, 0.08% (0.06-0.10) in the 30-39 years and 0.18% (0.15-0.21) in the 40-49 years, 0.20% (0.13-0.27) in the 50-59 years, 0.27% (0.11-0.43) in the 60-69 years, 0.56% (0.01-1.10) in the 70+ years. Logistic regression analyses indicated that DHs were associated with RNFL defects (odds ratio (OR), 69.602; 95% CI, 52.645-92.021; p < 0.001), older age (OR per 10 years, 1.226; 95% CI, 1.062-1.416; p = 0.006). A significantly higher proportion (48.0%) of disc rim-type DH was found in the eyes with RNFL defects than without RNFL defects (23.4%; Chi-square test, p < 0.001).

Conclusions: The prevalence of DHs was 0.14% in South Korean aged 20+ years. Older age as well as RNFL defects were associated with higher prevalence of DHs. Disc rim-type DH was significantly more common in eyes with RNFL defects than without RNFL defects.