

IRRITABLE BOWEL SYNDROME IS A RISK FACTOR FOR GLAUCOMA; ANALYSIS OF TWO EUROPEAN POPULATION-BASED COHORT STUDIES

Purpose: Irritable Bowel Syndrome (IBS) is a common chronic disorder associated with abnormal gastrointestinal microbiome. Microbiome-host interactions have been found to play an important role in maintaining central nervous system homeostasis. We thus assessed IBS as a possible risk factor for glaucoma in two large cohort studies.

Methods: Data from 1958 Birth Cohort Study (UKBC; 9091 individuals) and the Danish National Patient Registry (DNPR; 62,541 individuals with IBS, and 625,410 matched controls) were analysed. In the UKBC, self-reported data were collected from frequent questionnaires throughout life. In the DNPR, physician logged data were collected from national registries of publically provided healthcare. Gender, diabetes and sleep apnea were considered as covariables. The UKBC was analysed with multiple logistic regression. The DNPR was analysed with Cox regression models.

Results: In the UKBC, participants reporting IBS at age 42 were 2.15 times as likely to have developed glaucoma by age 50 ($p = 0.049$, 95%CI 1.00-4.61). Participants reporting IBS at both 42 and 50 years old were 6.58 (95%CI 2.57-16.84) times as likely to have developed glaucoma. This finding remained robust after adjustment for gender and diabetes.

In the DNPR, people with IBS were at a 1.35 fold increased risk for developing physician diagnosed glaucoma (95%CI 1.15-1.59) over up to 18 years follow-up. IBS patients showed a 1.34 fold increased risk for glaucoma surgery (95%CI 1.04-1.74) and 1.18 fold increased risk of initiation of glaucoma medication usage (95%CI 1.01-1.38).

Conclusion: In two European populations, IBS is a risk factor for glaucoma.