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The Prevalence of Glaucoma in Diabetic Patients

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Abstract:

Diabetes is a major health issue which is increased due to the changes in the life style, and Glaucoma is a major cause of worldwide irreversible blindness. There are three studies that are shown in this report that there is a relation between diabetes and glaucoma. The first study conducted 1200 diabetics for a routine examination and to check if they had glaucoma, the results showed that the majority of patients who had glaucoma had Primary Open Angle Glaucoma (POAG). The second study was a cohort study for 841 diabetics to confirm the association of glaucoma in senior diabetic patients, the results were positive and it was significantly associated to the duration of diabetes. The last study was a specific for POAG to confirm if it is the most common type of glaucoma for diabetics, the results of the study showed clear evidence of an excess of POAG in diabetic population.

Introduction:

Diabetes mellitus represents a significant public health issue which has become increasingly prevalent due to changes and trends in diet, lifestyle, and consequently, the rate of obesity. Since 1980, the worldwide prevalence of diabetes has nearly quadrupled to an estimated 422 million affected persons in 2014. Glaucoma represents the leading cause of worldwide irreversible blindness, as defined by best-corrected central visual acuity of less than 3/60 or a visual field of less than 10° in the better seeing eye. It is characterized by pathognomonic optic nerve changes which result in progressive visual field loss over time. Whether or not an association exists between diabetes mellitus and glaucoma has been an issue of debate in the past, but findings from several studies in recent years seem to suggest that the risk of glaucoma among diabetic patients may be greater than once believed.¹ In this report, we evaluate the prevalence of glaucoma in diabetic patients.

Discussion:

The first study was conducted on 1200 diabetic patients between 15 - 75 years of age attending the Endocrinology and Ophthalmology departments. Systemic, routine ophthalmic examination and laboratory investigations were done in all cases. Applanation tonometry, slit lamp biomicroscopy, gonioscopy and disc evaluation using Goldman 3-mirror lens, +90 D lens and visual field examination (using Humphrey visual field analyzer utilizing SITA standard strategy program 30-2) was performed. The results showed that among 1200 patients, Primary Open Angle Glaucoma (POAG) was found in 7.0% (n=84), Ocular Hypertension (OHT) in 3.33% (n=40) and Neovascular Glaucoma (NVG) in 2.33% (n=28). The prevalence of POAG in this study was nearly 5-6 times higher than that as seen in the general population.²

The second study was a cohort study that was comprised of 841 diabetics. The mean age of the cohort was 53.8 ± 10.7 years. There were 320 (38%) females. It showed that the prevalence of glaucoma was 15.6% (95%). More than 75% of the diabetics had no evidence of diabetic retinopathy (DR). Half of the diabetics with glaucoma had primary open angle glaucoma. The presence of glaucoma was significantly associated to the duration of diabetes.³

The final study was a specific study for POAG in diabetic patients, about Four hundred diabetic patients, both insulin dependent and non-insulin dependent, above forty years of age, attending Tertiary Eye Hospital, who came to Department of Ophthalmology through camp, between September 2016 and May 2017, were screened for the detection of Primary Open Angle Glaucoma.

Results: The results of the study show a clear evidence of an excess of POAG in diabetic population, which was 7.53 %. The prevalence among males was slightly more (4.41 %) as compared to females (3.12%). At present study, the mean age of POAG among males was 54.5 years and 50.0 years among females.⁴

Conclusion:

We conclude that diabetes really did have an association glaucoma, and it is shown that with the progression of diabetes the risk of glaucoma increases, and the most common type of glaucoma in diabetics is indeed primary open angle glaucoma.

Reference:

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