ABSTRACT

AIM:
To analyse the demographic pattern, etiology, clinical presentation, treatment modalities and outcomes of neovascular glaucoma in a tertiary care centre

MATERIALS AND METHODS:
100 cases of Neovascular Glaucoma i.e; IOP > 21mmHg with neovascularisation of Iris and/or angles were included whereas patients with Primary open angle glaucoma, Primary angle closure glaucoma and other forms of secondary glaucomas and also patients with age less than 18 years were excluded from the study. Visual acuity by Snellens chart, Anterior segment evaluation with slit lamp examination, fundus examination by direct ophthalmoscopy and slit lamp biomicroscopy using 90D, Indirect ophthalmoscopy, IOP measurement by Goldmann applanation tonometer / rebound tonometer and gonioscopy using Goldmann single mirror examination were done for all patients. Routine investigations like Blood sugar, Urine analysis, blood pressure measurement were done. Fundus Fluorescein Angiography to look for neovascularization and macular edema done when then was a clear fundus view. The etiology and the stage of presentation were assessed and the treatment approach was decided and appropriately managed.

Final visual outcome and IOP were measured and recorded after the desired treatment given. During the follow up visits, the complications resulting from the various treatment modalities were also recorded and analysed.
RESULTS:

In our study, maximum number of patients (39%) presented in the age group between 61-70 years. The presenting vision was a very low such that 8% had NOPL, 86% had vision < 6/60 and only 8% had vision > 6/60. Of these, only 26% improved to have vision > 6/60. The presenting IOP was also very high with maximum number 70% with IOP range of 30-50mmHg. Of these, there was a persistent uncontrolled high IOP in 30% of patients. The patients also presented in advanced stages of the disease with 40% in Stage 3 (open angle), 52% in Stage 4 (angle closure) and 8% in Stage 5 (absolute stage) of Neovascular glaucoma. Among these, Open angle group had a final better visual outcome of more than 6/60 in 50% of cases and a fair Intraocular pressure control of less than 30mmHg in 87.5% of patients, whereas in angle closure group, only 26.9% achieved vision > 6/60 and 50% attained IOP less than 30mmHg. The most common etiology was found to be Diabetic retinopathy (37%) followed closely by vascular occlusion (30%) suggesting retinal ischemia to be the most common cause of neovascular glaucoma.

Most commonly employed treatment modality was surgical intervention including trabeculectomy and Glaucoma drainage device implantation (40%). The most common complication following PRP and surgical procedures was Iritis. There was also shallow anterior chamber (50%), choroidal detachment (22%) and hyphaema (33%) following surgery. 50% had transient increase in IOP following intravitreal anti VEGF. 26% had conjunctival hyperemia and persistent pain following medical therapy.
CONCLUSION:

Neovascular glaucoma presents in elderly and in advanced stages. Most commonly occurs in response to retinal ischemia necessitating close follow up of diabetics and vascular occlusions to identify neovascularisation in early stages. Visual outcomes and IOP control are poor in angle closure than open angle stage, also requiring surgical intervention, the complications of the same being varied and difficult to manage. Thus, it is a disease of poor prognosis and must be identified early and management must include controlling the IOP as well as the ischemic drive to control the neovascularisation.

KEYWORDS: Neovascular Glaucoma, Intraocular pressure, Panretinal photocoagulation, Trabeculectomy, Anti metabolites, Glaucoma Drainage Device, Angle closure.