CURRENT MANAGEMENT STRATEGIES OF NEOVASCULAR GLAUCOMA

- Neovascular Glaucoma is a potentially devastating secondary form of glaucoma that results from the growth of fibrovascular membrane over the trabecular meshwork in the anterior chamber angle.

- The delayed diagnosis or poor management can result in complete loss of vision or loss of the eye. The current impetus is therefore on early diagnosis followed by immediate and aggressive treatment.

- The availability of effective anti-VEGF drugs, better cyclo-destructive procedures and newer glaucoma implants has brought about a drastic change in the management of neovascular glaucoma.

- Most common causes of Neovascular Glaucoma are: Retinal Ischaemic Disorders – 97%, (Diabetic Retinopathy CRVO (common) irrespective of aetiology), extra ocular vascular disorders, carotid artery occlusive disease, ocular tumors, irradiation, post surgical, inflammatory disease, miscellaneous. The risk of NVG in CRVO is 16% ranging from 10% in perfused eyes to 40% in non-perfused eyes.

- The various causes of Neovascular Glaucoma follow a common path.
All causes result in retinal hypoxia which releases various angiogenic substances viz. VEGF, FGF, into the vitreous. This diffuses from the posterior to the anterior chamber and results in new vessel formation at the angle and pupil.

WORK-UP OF NEOVASCULAR GLAUCOMA

- High index of suspicion is required for proper diagnosis.

- In all patients, visual acuity, pupil with RAPD more than 0.7 log units and slit lamp examination to rule out rubeosis along with undilated gonioscopy should be performed in the follow-up of cases with a risk of neovascular glaucoma.

- 6-12% of eyes have neovascularization of the angles (NVA) with neovascularization of the iris (NVI).

- The hallmark of neovascular glaucoma is elevated intraocular pressure + neovascularization of iris/neovascularization of angles.

AIM OF TREATMENT

Aim of treatment is lowering the elevated intraocular pressure, treatment of retinal ischaemia, maintaining visual acuity, prevention of painful blind eye and regression of NVI/NVA.

MANAGEMENT OF NEOVASCULAR GLAUCOMA

This includes topical steroids, cycloplegics usually Atropine and anti-glaucoma medications preferably beta-blockers and carbonic anhydrase inhibitors. Prostaglandins and pilocarpine are not a drug of choice. Following are the flow charts for management of neovascular glaucoma in patients with and without useful vision.

Various drainage implants can be used if multiple trabeculectomy augmented (with MMC + Injection Intravitreal Bevacizumab) fails. Intravitreal and intracameral injection Bevacizumab have been used widely in the treatment of neovascular glaucoma.

With currently available modalities, different forms of laser, newer anti-VEGF treatment, better cyclo-destructive procedures it should be possible to maintain useful vision and prevent the loss of globe in most patients with neovascular glaucoma.

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