PRACTICAL APPROACH TO MEDICAL MANAGEMENT OF GLAUCOMA

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TERMINOLOGY

- POAG: PRIMARY OPEN ANGLE GLAUCOMA
- NTG: NORMAL TENSION GLAUCOMA
- OH: OCULAR HYPERTENSION
- PRE PERIMETRIC GLAUCOMA
- TARGET IOP
POAG : PRIMARY OPEN ANGLE GLAUCOMA

- Chronic progressive optic neuropathy.
- Characteristic optic disc changes.
- Corresponding visual field defects.
- IOP only treatable factor.
- It’s a diagnosis of exclusion.
NTG: NORMAL TENSION GLAUCOMA

• Same as POAG
• Except that
  - CCT corrected IOP is less than 22 mmhg applanation on dirurnal variation.
PREPERIMETRIC GLAUCOMA

- Disc changes (cupping) present.
- Nerve fiber layer (NFL) changes present.
- No defect on white on white perimetry.
BASIC PRINCIPLES

1. Establish a diagnosis.
2. Establish a baseline IOP.
3. Set a target IOP.
4. Initiate therapy to lower IOP to target.
5. Follow up.
ESTABLISH A DIAGNOSIS

• CEE Comprehensive Eye Examination
• No substitute to CEE
• CEE comprises of
  - Slit lamp biomicroscopy
  - Goldman applanation tonometry
  - Gonioscopy, preferably indentation & dynamic
  - Indirect ophthalmoscopy
  - Stereoscopic examination of optic disc & NFL
APPLANATION TONOMETRY

• Single reading not reliable, poor sensitivity & specificity.
• Repeat IOP.
• Diurnal variation.
• Goldman / Perkins are standard.
• Schoitz outdated, very limited role in modern glaucoma management.
GONIOSCOPY

• Diagnosis of POAG is by exclusion.
• Indentation gonioscopy more useful.
• Dynamic procedure should be repeated
• Rule out
  - Narrow angle
  - Closure
  - Secondary glaucoma
OPTIC DISC & RNFL ANALYSIS

• Best by 60 D or 90 D lens (stereo biomicroscopy).
• Red free illumination for Retinal Nerve Fiber Layer.
• Stereo photographs of optic disc are gold standard.
IMAGING TECHNIQUES

- AIGS (Association of International Glaucoma Societies) does not support the use of
  - HRT - HEIDELBERG RETINAL TOMOGRAPHY
  - GDX VCC - SCANNING LASER POLARIMETRY
  - OCT - OPTICAL COHORENCE TOMOGRAPHY
for all patients, but yes in hands of experts for selected cases.
ESTABLISH A BASELINE IOP

• IOP
  - Only known causable and treatable factor.
  - One time recording of IOP misleading.
  - Repeat IOP.

• DVT (diurnal variation test)
  - 3 hrly recording of the IOP over 24 hrs.

• CCT Central Corneal thickness
  - To rule out OH & NTG
SET A TARGET IOP

• Early Manifest Glaucoma Treatment Study
  - 25% reduction in IOP reduces progression of glaucoma from 62% to 45%

• Collaborative Initial Glaucoma Treatment Study (CIGTS)
  - Recommends IOP reduction by 35%
CUSTOMIZATION OF TARGET IOP

- Structural damage of Optic Disc & RNFL.
- Functional damage on white on white perimetry.
- Baseline IOP at which damage occurred.
- Age
- Presence of additional risk factors.
FORMULA FOR TARGET IOP

- Rule of thumb
  - 20% reduction for mild cases.
  - 30% for moderate cases.
  - 40% for severe cases.
TO LOWER IOP TO TARGET LEVELS

Following factors to be kept in mind

• Efficacy
• Compliance
• Safety
• Persistence
• Affordability
• If cost effective & minimum dosage then compliance improves.
20% REDUCTION

- Beta blockers are treatment of choice.
- Efficacy of these drugs reduce if patient is already on systemic beta blockers.
35% REDUCTION

• Prostaglandin analogues
• Latanoprost 0.005% requires cold chain except new Latoprost RT.
• Bimatoprost 0.03% most effective of all PG analogues but more side effects, hyperemia, trichomegaly, darkening of lids and iris pigmentation.
• Travoprost 0.004%
PROSTAGLANDIN ANALOGUES

• Don’t use them in inflammatory glaucomas.
• If no response then try switching brands because some patients respond.
• They are now the most preferred line of management in Non inflammatory glaucomas.
MORE THAN 40% REDUCTION

• Combinations are most preferred.
• No single drug can reduce the IOP lower than 40%.
• Brimonidene tartarate (alpha 2 agonist)
• Dorsolamide (carbonic anhydrase inhibitor)
• Beta blockers
• Prostaglandin analogues
• Use in combinations which have minimal dosage and are cost effective.
DOSAGE

- Beta blockers - twice daily
- Alpha 2 agonists - three times a day if used as single therapy and twice daily if in combination.
- Dorsolamide – same as alpha 2 agonists.
- Prostaglandin analogues – single dose, preferably at night.
SYSTEMIC DRUGS

• Mannitol 20% - IV fast 100 ml to 300 ml
• Acetazolamide 250 mg. tablet up to 4 times a day.
SIDE EFFECTS TO BE MENTIONED TO PATIENT

- Beta blockers - dryness, itching, punctal compression after putting drops to prevent systemic side effects, systemic (bronchiospasm)

- PG Analogues - hyperemia, trichomegaly, darkening of lashes, iris, skin of lids. (all are reversible), irritation, burning sensation and lid oedema.
MOST IMPORTANT

• An information leaflet regarding glaucoma and counseling the patient and relatives.
• Its your approach that makes the patient go ahead for treatment and regular follow up.
• Give time to your glaucoma patient.
• Praise the lower IOP value in follow up visits and the effort he/she has put in taking the treatment.
THANK YOU