



Risk Assessment

- Consider number of risks individual has that puts them at risk for
 - conversion of ocular hypertension to the development of glaucomatous damage OR
 - from early glaucomatous damage to blindness
- Based upon evidence
- Studies include Ocular Hypertension Treatment Study
- What risk is too much and therapy is indicated prophylactically?
- Uses concept from Framingham Heart Study and Cardiovascular disease

Risk Assessment

- In cardiovascular disease, evaluate risk factors for conversion of hypertension to known outcome such as MI or CVA
 - Risks include hypertension, obesity, elevated cholesterol, smoking, family history, sedentary lifestyle
- Use similar risk factor assessment for the development of glaucoma
 - Outcome measure is not as obvious
 - When is glaucoma present?
 - Optic nerve damage only vs. nerve and field loss

Risk Assessment

- Age
- IOP
- Corneal Thickness
- Vertical Cup/Disc Ratio
 - Optic Nerve healthy
- PSD Visual Field
 - Global Index
 - Field full

Risk Assessment

- Risk Level Low < 5%
 - Monitor
- Risk Level Moderate 5-15%
 - Consider Therapy Discuss with patient
- Risk Level High >15%
 - Treat



Initial Medical Management of OAG

- Before starting therapy
 - obtain several IOP readings
 - either done on one day (diurnal curve) or over 2-3 days at different times
 - need detailed pretreatment information
 - medical and ocular
 - grade severity of glaucoma
 - based upon nerve appearance, fields and highest IOP

Describe and Understand Condition

- Open vs. Narrow Angle
 - Chronic angle closure glaucoma resembles open angle forms
 - detect with gonioscopy
 - Asians
- Primary vs. Secondary forms
 - detect with slit lamp evaluation
 - secondary glaucomas

Clinical Correlations in Glaucoma

- Compare the visual field and optic nerve appearance
- Does the disc and visual field correlate?
- Does the comparison between the right and left eyes fit?

Initial Medical Management of OAG

- Ask “How will optic nerve and visual field appear in twenty years”
 - not in 3 months
 - Hattenhauer
- Lower target IOPs
 - AGIS data
 - Sustained IOP reduction

Glaucoma Grand Rounds in Glaucoma

- Target pressure
- Select therapy vs. No therapy
 - Medications
 - **Prostaglandins- most common first line agent**
 - Beta blockers
 - CAI
 - Adrenergic
 - Laser Trabeculoplasty
 - Filter Surgery

Selecting the Primary Medication Open Angle Glaucoma

- Base the decision on:
 - Stage of disease
 - driver for choosing initial therapy
 - Baseline IOPs
 - General health of patient
 - Insurance coverage
 - Systemic medications
 - consider Brimonidine or Latanoprost if on systemic β -blocker

Select Target Pressure

- Think in terms of Per Cent Reduction from highest IOP reading
- Greater the damage, lower the IOP needs to be

Setting Target Pressures

- Consider the following:
 - How bad is the glaucoma?
 - How long did it take to get that bad?
 - get from old records if possible
 - What is the life expectancy of the patient?
- Trend is for lower target IOPs
 - sustained reduction

Target Pressures

- Setting the target IOP, consider highest IOP
 - IOP in 40 with some cupping, asymmetry and early field loss
 - IOP in low 20s may work
 - Same amount of damage but presenting IOP of 20
 - need to be more aggressive

Modifying the Medical Regimen Lack of Control

- IOP too high
 - Reverse Monocular Trial
- IOP Variability
- Optic Nerve Progression
- Visual Field Loss
- Adding a medication
 - medications vs. laser vs. filter surgery
 - add medication vs. increase dosage or concentration

Risk Factors for the Progression of Glaucoma

Risk Factors
Older age ¹⁻³
Higher IOP (baseline) ²
Higher IOP (over follow-up) ²
IOP fluctuation ⁴
VF status at baseline ²
Race (nonwhite) ^{3,5}
Disc hemorrhage ^{2,5}
Pseudoexfoliation ²

When do you Add or Switch a Medication

- Beware of “Regression to Mean”
- Tendency is to do nothing or add medications
 - tolerance develops to some medications
 - Beta Blockers, Alpha Agonists
- Is the angle getting narrow?
 - Perform gonioscopy

Hypotensive Efficacy Adding to PGs

- Beta Blockers
- Miotics
- Carbonic anhydrase inhibitors (PO)
- α_2 -adrenergic agonists
- Topical CAIs

Managing Glaucoma

- First medication
 - Prostaglandin
- Second medication
 - Topical CAI or Alpha Agonists
 - Or switch to different prostaglandin
- Third medication or Modality- Try to not exceed two bottles
 - Fixed Combination – Combigan or CoSopt
- Fourth medication or modality
 - ALT/SLT
- Fifth modality- Surgery

When is surgery indicated?

- Poor control
 - progression noted in optic nerve or v. fields
 - account for variability on visual fields
 - repeat test to confirm change
- IOP above target pressure
 - exhausted several or all medical options
- Medication side effects
- Poor compliance