Glaucoma

SOURCES:

-Doctors slides.

-Lecture Note "9th edition".

-Toronto's notes.

- 429 males lecture notes.

This revision is done by Ahlam Al-Maawi , for primary open angle glaucoma, and primary closure angle glaucoma

Best of Luck

Glaucoma:

Definition:

Progressive optic neuropathy involving characteristic structural changes to optic nerve head with associated visual field changes. Commonly associated with high Intra-Ocular pressure (lOP), but not required for diagnosis.

Background Physiology:

The intraocular pressure level depends on the balance between production and removal of aqueous humour. Aqueous is produced by the ciliary body and flows from the posterior chamber to the anterior chamber through the pupil and drains into the episcleral veins via the trabecular meahwork and Canal of Schlemm.

*Facts about Glaucoma:

- A major cause of blindness.
- Often Asymptomatic; in early stage.
- Damage is irreversible.
- The pathophysiology of glaucoma is multifactorial.
- Loss of peripheral vision most commonly precedes central loss

Risk Factors(MCQ):

1. Family history.
2. Age.
3. Myopia (Hyperopia In angle closure glaucoma).
4. African descent.
5. Diabetes.
6. Hypertension

Investigations:

• Visual acuity testing.
• Slit lamp to assess anterior chamber depth + Gonioscopy. (to assess the angle).
• Ophthalmoscopy to assess the disc features.
• Tonometry (to measure the lOP).
• Visual field testing.

*Normal IOP: 10-20 mmgh

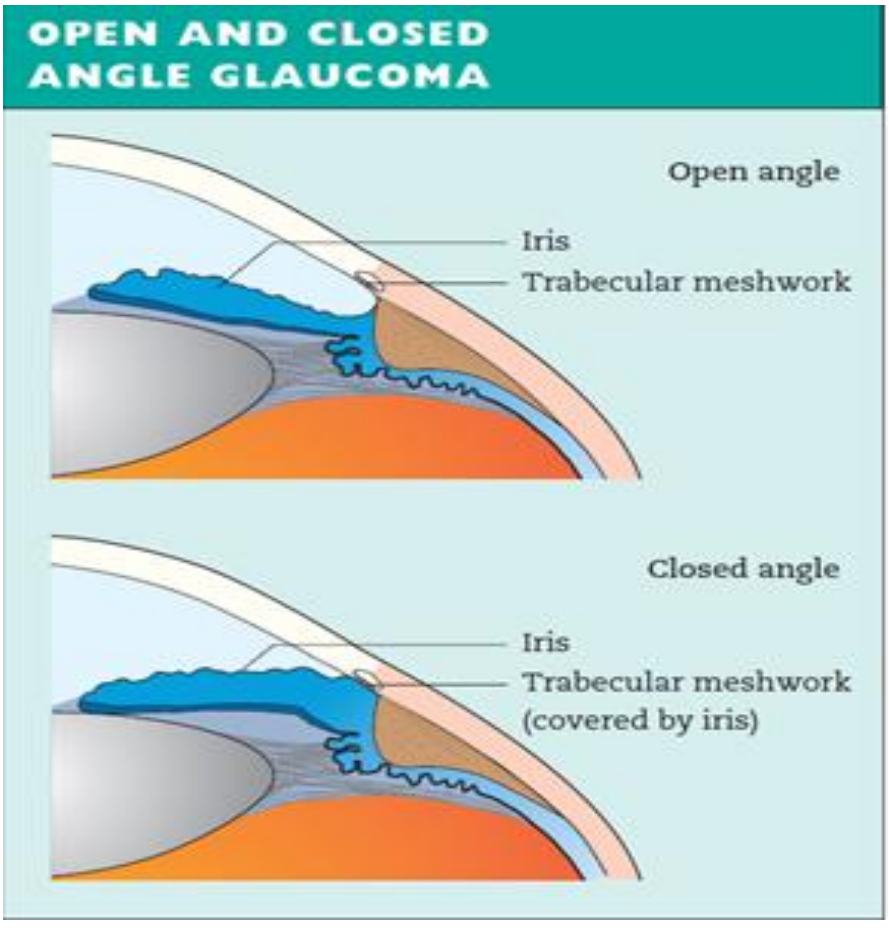
*Normal cup:disk ratio: 0.3-0.5

**Classification is based on whether or not the iris is:

1) Clear of the trabecular meshwork (*open angle*).
2) Covering the meshwork (*closed angle*).

Classifications:

- **Primary**
  - Open angle
  - Closed angle
- **Congenital**
- **Secondary**
  - Open angle
    - 1) traumatic glaucoma.
      2) steroid-induced glaucoma
      3) pigmentary dispersion syndrome.
      4) pseudoexfoliation syndrome.
  - Closed angle
    - Uveitis: (inflamed iris adheres to lens).



Primary Open Angle Glaucoma	Primary Angle Closure Glaucoma
• 95% of all glaucoma cases • Due to obstruction of aqueous drainage within the trabecular meshwork. **Clinical Features: • Asymptomatic initially. • Gradual rise in lOP (Chronic). • Bilateral, but usually asymmetric. • Increased cup:disc ratio (vertical C:D >0.6). • Visual field defect. • Thinning, notching of the neuroretinal rim. ❖ Treatment: 1) **medical treatment:**** In chronic open angle glaucoma topical adrenergic beta-blockers are the usual first line treatment (be careful in asthma). 2) **Laser treatment.** 3) **Surgical treatment:** Trabeculectomy. Complications of surgery include: •shallowing of the anterior chamber •intraocular infection; •accelerated cataract development; •failure to reduce intraocular pressure adequately.	• 5% of all glaucoma cases • peripheral iris bows forward in an already susceptible eye with a shallow anterior chamber obstructing aqueous access to the trabecular meshwork -usually small eye (often hypermetropic). **Clinical Features • Red, painful eye = RED FLAG. • Marked increase in lOP (Acute). • Unilateral, but other eye predisposed. • Decreased visual acuity. • Nausea and vomiting, abdominal pain. • fixed, mid-dilated pupil. ❖ Treatment: Immediate treatment important to: • preserve vision • prevent adhesions of peripheral iris to trabecular meshwork (peripheral anterior synechiae). 1)Systemic carbonic anhydrase Inhibitors (IV acetazolamide). 2) Topical beta-blockers. 3) Topical cholinergics. 4) Iridotomy or iridectomy.

**** Medical treatment:**

A) Increase aqueous outflow:
1) topical cholinergics
2) topical prostaglandin analogues
3) topical alpha-adrenergics

B) Decrease aqueous production:
1) topical beta-blockers
2) topical and oral carbonic anhydrase inhibitor
3) topical alpha-adrenergics