

BACKGROUND

- Retrobulbar Hematoma (**RH**) = Collection of blood in the **retrobulbar space** → short or long-term **visual impairment**.
- If **untreated** >60-100 minutes → elevated IOP → retinal and optic nerve **ischemia** → **blindness**.
- Research on RH shows **conflicting** findings regarding its most **prevalent** signs, symptoms, and most **effective** management.

OBJECTIVE

Evaluate **presentation, management, and visual outcomes** in various cases of **traumatic RH**.

METHODS

- **Retrospective review:**
 - Adult patients who presented to the R Adams Cowley Shock Trauma Center
 - With a **traumatic RH** diagnosis
 - Followed up by **ophthalmology**
 - **2014-2022**
- Our study outcomes included:
 - Frequency of presenting ocular **symptoms and signs**
 - **IOP** (mm Hg)
 - **Visual acuity** using Snellen's chart
 - **Restoration of normal vision** (self-reported)

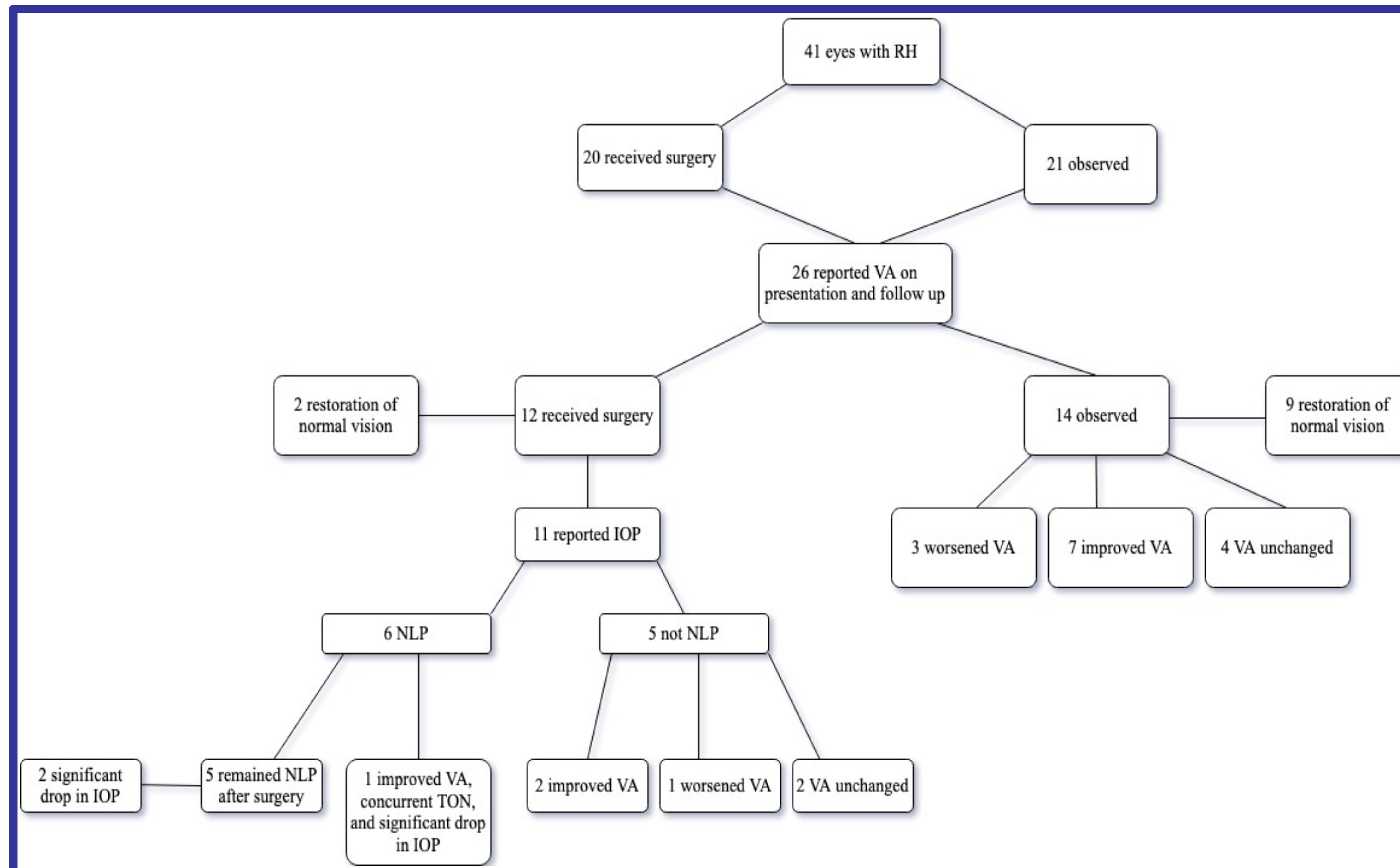


Figure 1. Flow diagram of our cohort.

Acronyms – NLP: No Light Perception, IOP: Intraocular Pressure, VA: Visual Acuity, TON: Traumatic Optic Neuropathy

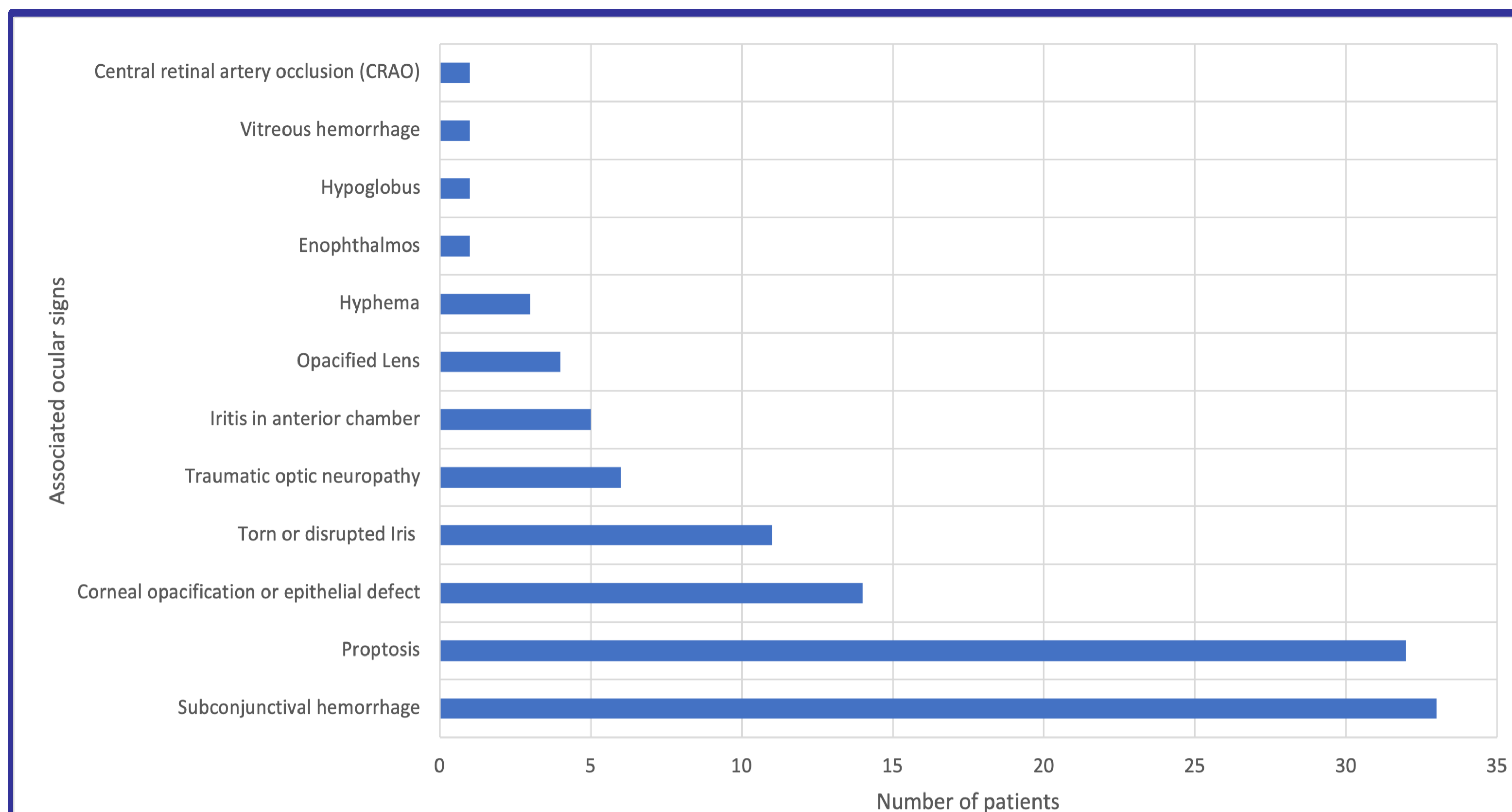


Figure 2. Frequency of presenting ocular signs.

RESULTS

- 41 eyes (39 patients) with traumatic RH.
 - Majority **males** (31 [75.6%]).
 - Median (IQR) age: **41** (34-59) years.
 - Majority **African American** (22 [53.7%]).
- Most common mechanism of injury: **Assault** (20 [48.8%]).
- Most common presenting signs:
 - **Subconjunctival hemorrhage** [33 [80.5%]].
 - **Proptosis** (32 [78%]).
 - **Elevated IOP** (22 [53%]).
- Most common presenting symptoms:
 - **Pain** (19 [46.3%]).
 - **Diplopia** (13 [31.7%]).
- Patients treated with lateral canthotomy and cantholysis (LCC) had a **significantly higher presenting IOP** ($p=0.001$) and were more likely to present **NLP** ($p=0.004$).
 - Although NLP patients may regain some vision after LCC, **LCC is not associated with significantly different odds of return to normal vision compared with observation**.
 - *However*, LCC → reduction of IOP → increased intraocular perfusion → may mitigate worsening of vision.
- **Visual acuity at presentation: the only significant predictor of visual acuity at follow-up** ($P=0.016$).

CONCLUSION

- RH should be considered in patients presenting with ocular **pain, diplopia, subconjunctival hemorrhage, proptosis, and elevated IOP**.
- **LCC** should be indicated in **NLP** patients, only if they have **elevated IOP**.
- **Initial visual acuity at presentation** is the most reliable predictor of visual acuity at follow up whether or not LCC is performed.