FP7604 - A CLINICAL STUDY ON ETIOPATHOGENESIS OF NEOVASCULAR GLAUCOMA

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FINANCIAL DISCLOSURE

- NO FINANCIAL INTEREST

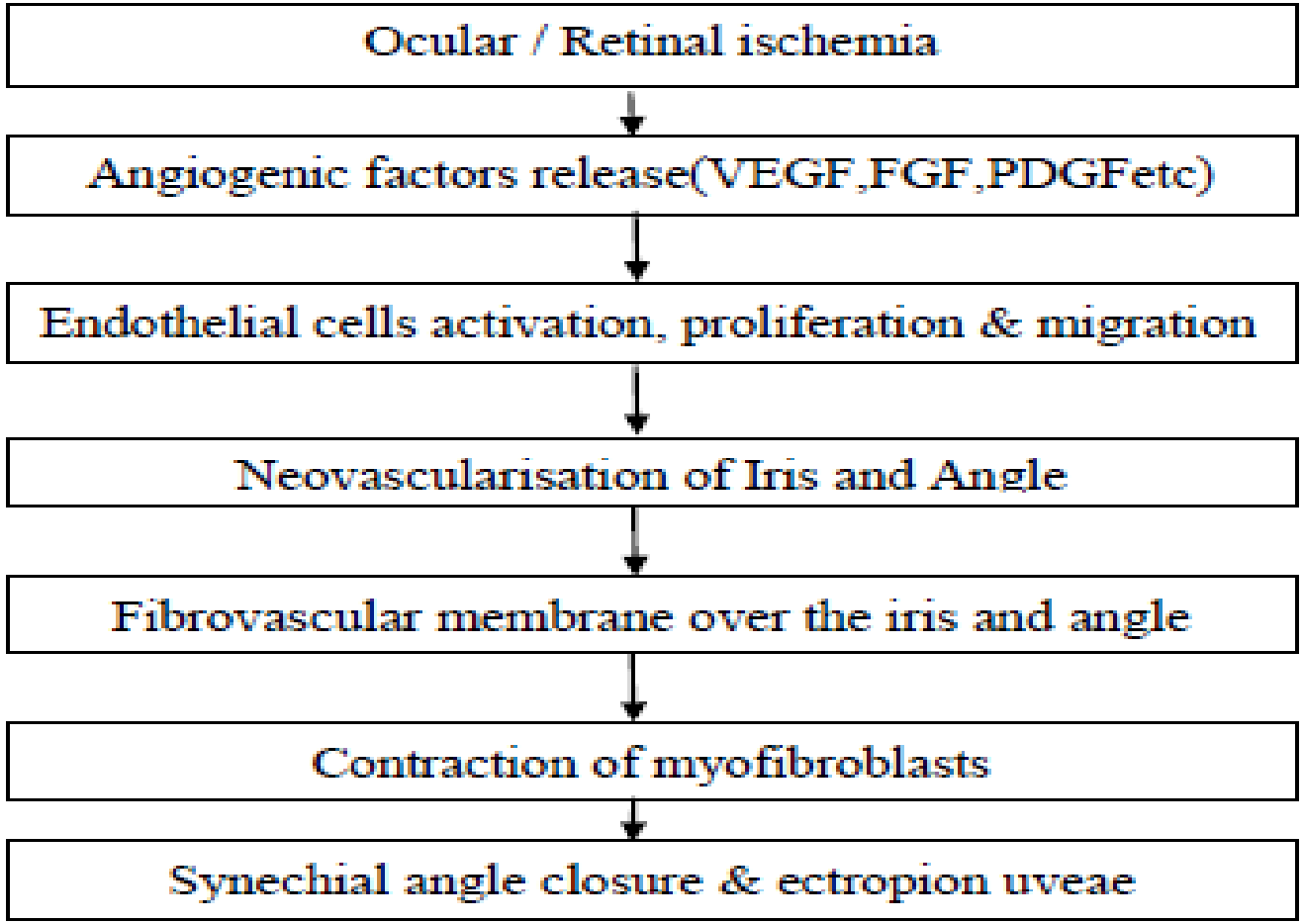
INTRODUCTION

- Glaucoma is considered to be the second major cause of blindness next only to cataract.

- It causes irreversible blindness.

- Neovascular glaucoma is a secondary glaucoma that has a potential to cause absolute glaucoma but may be prevented if the etiology identified at the right time and given a timely intervention.

PATHOGENESIS



NEOVASCULAR GLAUCOMA

- Neovascular glaucoma is a secondary glaucoma, due to fibrovascular membrane over either the surface of iris and/or of the angle, secondary to ocular ischemia.

ETIOLOGY:

- Diabetic retinopathy
- Central retinal vein occlusion
- Central retinal artery occlusion
- Chronic uveitis
- Retinal detachment

Stages of Neovascular Glaucoma

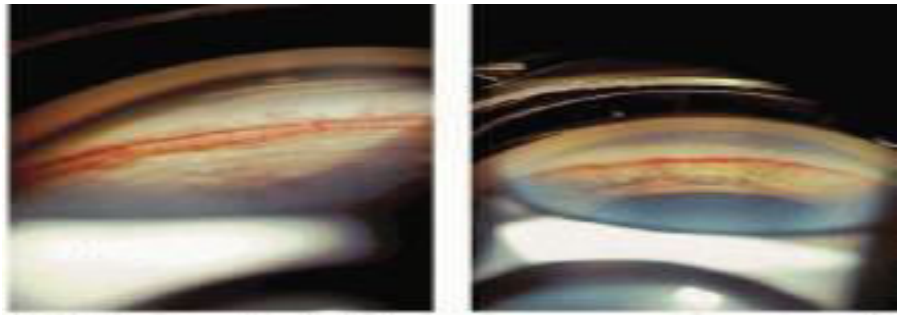
- Pre rubeotic stage
- Rubeotic stage
- Secondary open angle stage
- Secondary angle closure stage
- Absolute glaucoma

❖ PRE GLAUCOMA STAGE :

- Charecterised by **iris neovascularisation** with **normal IOP.**
- New vessels in iris :

❖ Secondary Open Angle Glaucoma Stage

- Occlusion of trabecular meshwork by inflammatory cells and fibrovascular membrane
- Acute onset of raised IOP



open angles with neovascularisation

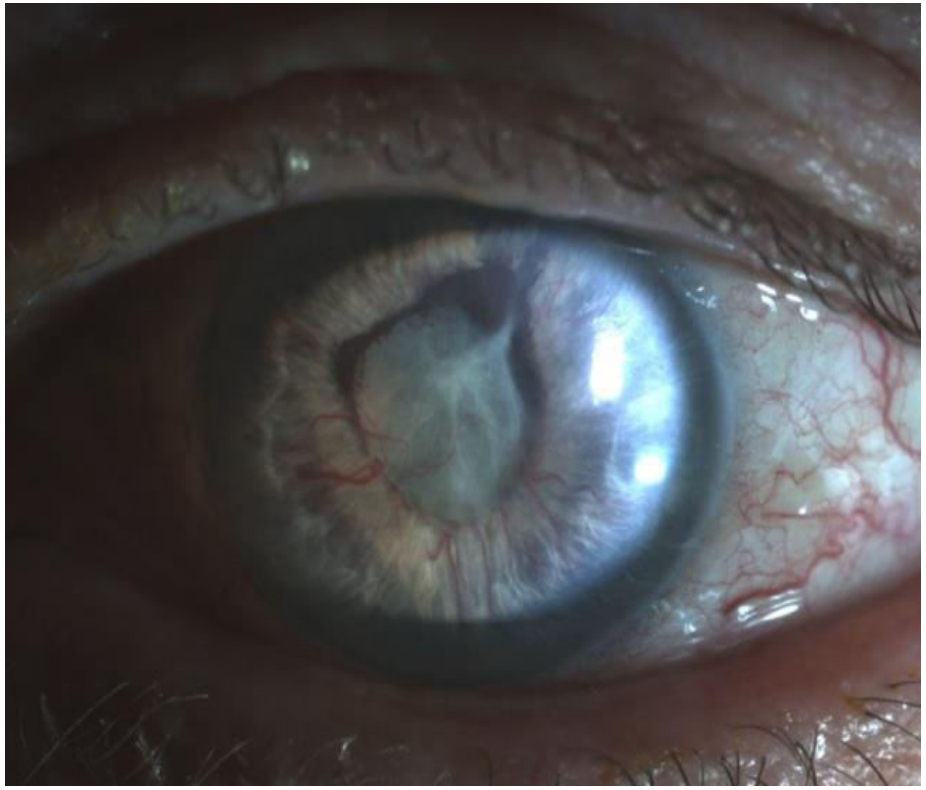
❖ Secondary Angle Closure Stage:

- Contraction of fibrovascular membrane leads to synechial closure of angle.

o Pupil: fixed , not reacting to light

o Neovasularisation of iris

o Ectropion uveae



MANAGEMENT

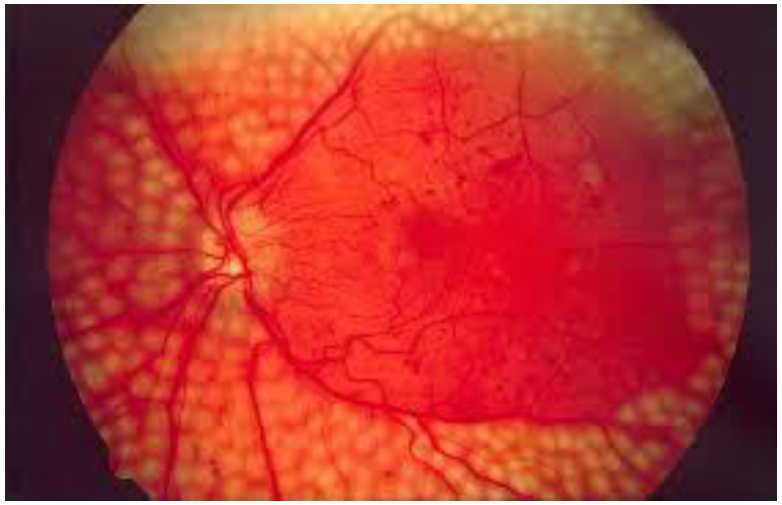
- A detailed ocular and systemic history
- Visual acuity
- Intraocular pressure measurement
- Central corneal thickness measurement
- Detailed Anterior segment examination with slitlamp
- ONH examination with +90D lens
- Gonioscopy
- Visual fields

- Medical Management :

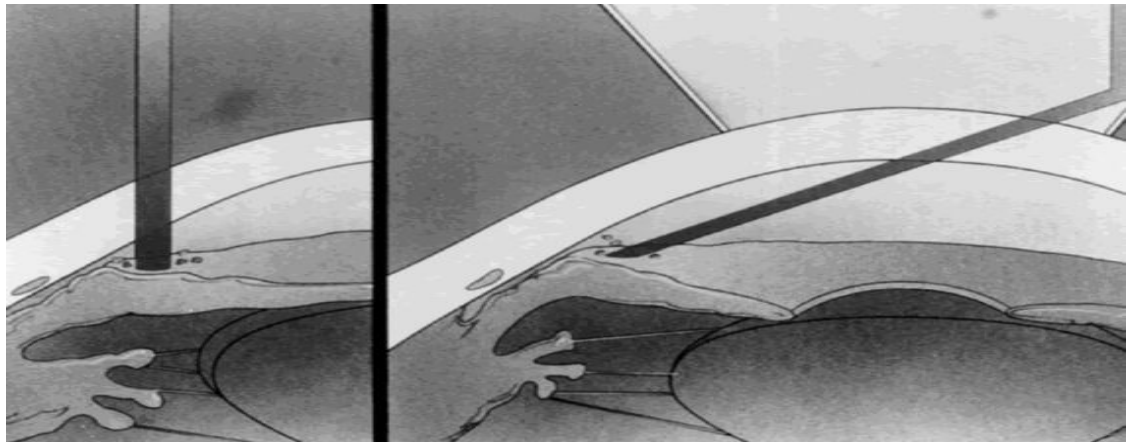
IOP lowering agents:

- Hyperosmotic agents – 20%Mannitol .
- Oral carbonic anhydrase inhibitors Tab. Acetozolamide 250mg QID or 500mg BD .
- Beta blockers like 0.5% Timolol,
- Carbonic anhydrase inhibitors like 2% Dorzolamide or 1% Brinzolamide,
- Alpha agonists like 0.2% Brimonidine

- **LASERS :**
- Pan Retinal Photocoagulation.



- Goniophotocoagulation.



- Anterior Retinal Cryotherapy

- **Intravitreal Anti VEGF** :

- Ranibizumab – 0.5mg in 0.05ml
- Bevazicumab – 1.25mg in 0.05ml
- Aflibercept (eylea) – 2mg in 0.05ml
- Pegaptanib (macugen) – 0.3mg in 0.05ml

- **SURGICAL MANAGEMENT**:
- Indicated in patients with useful vision when IOP is not controlled with maximum medical therapy.
- Trabeculectomy with anti metabolites improves the outcome.

- **Anti metabolites** :

- 5-Flurouracil(5FU) and Mitomycin C

AIMS AND OBJECTIVES

- To determine the etiopathogenesis of neovascular glaucoma.

MATERIALS AND METHODS

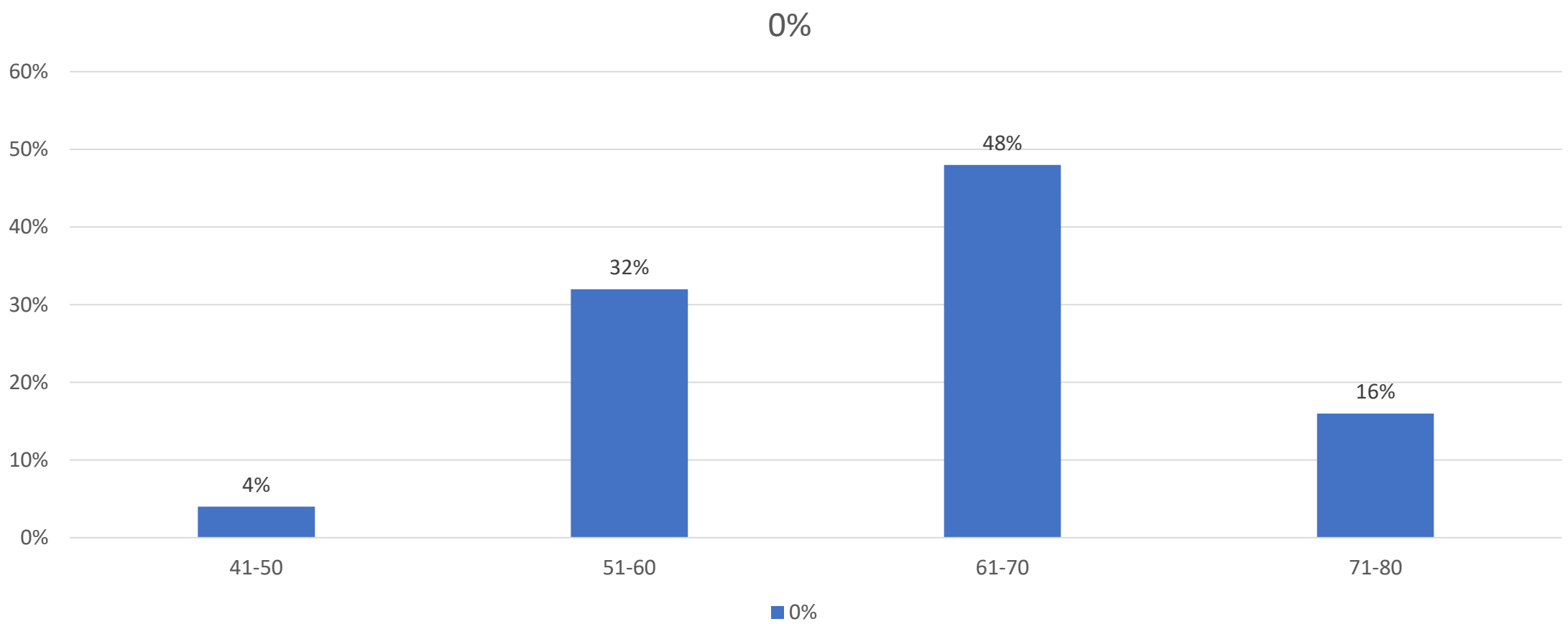
- A Observational clinical study was carried on 25 cases of neovascular glaucoma who attended to department of ophthalmology in a tertiary care centre from November 2019 to August 2021.

INCLUSION CRITERIA

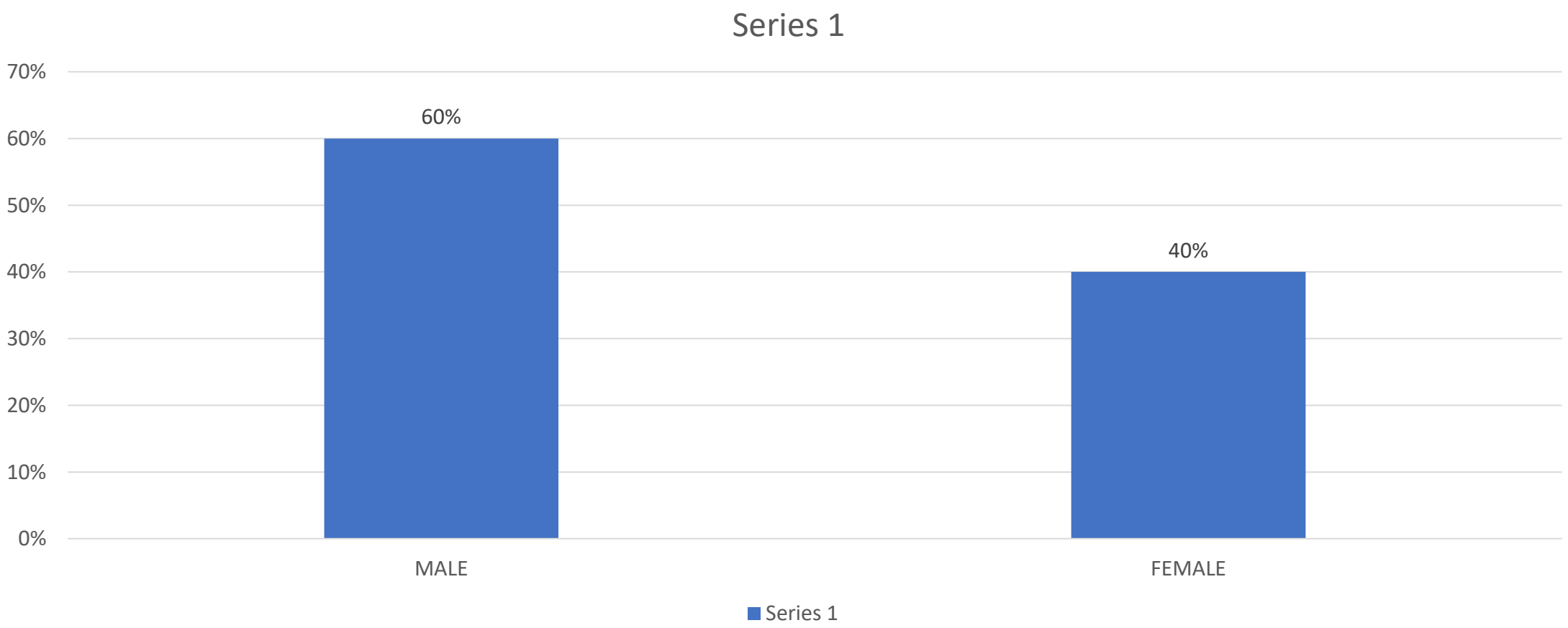
- All patients with neovascular glaucoma attending to out – patient department in teritary care centre.

RESULTS

AGE DISTRIBUTION

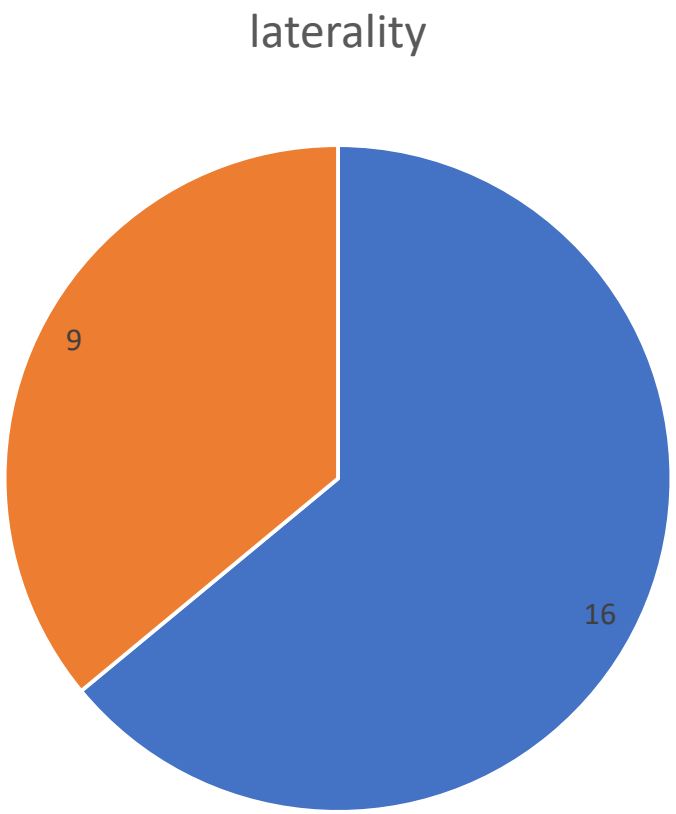


SEX DISTRIBUTION



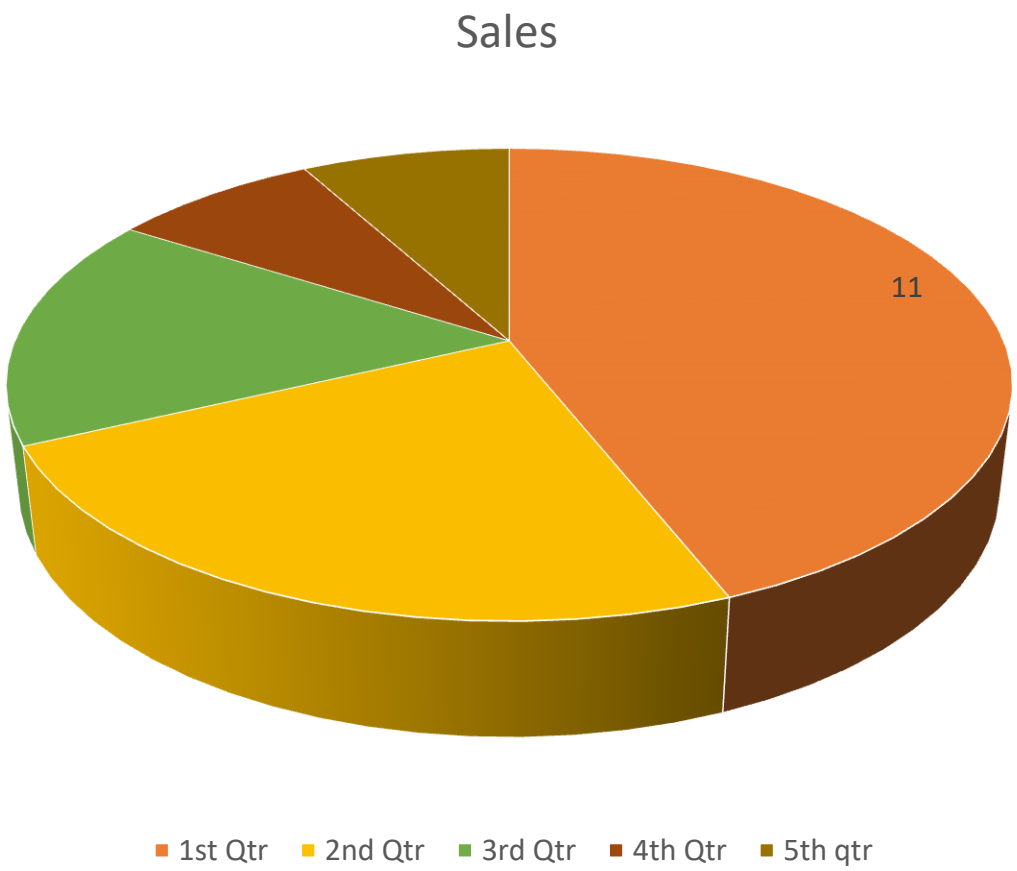
LATERALITY

- BILATERAL 9 cases
- Unilateral 16 cases

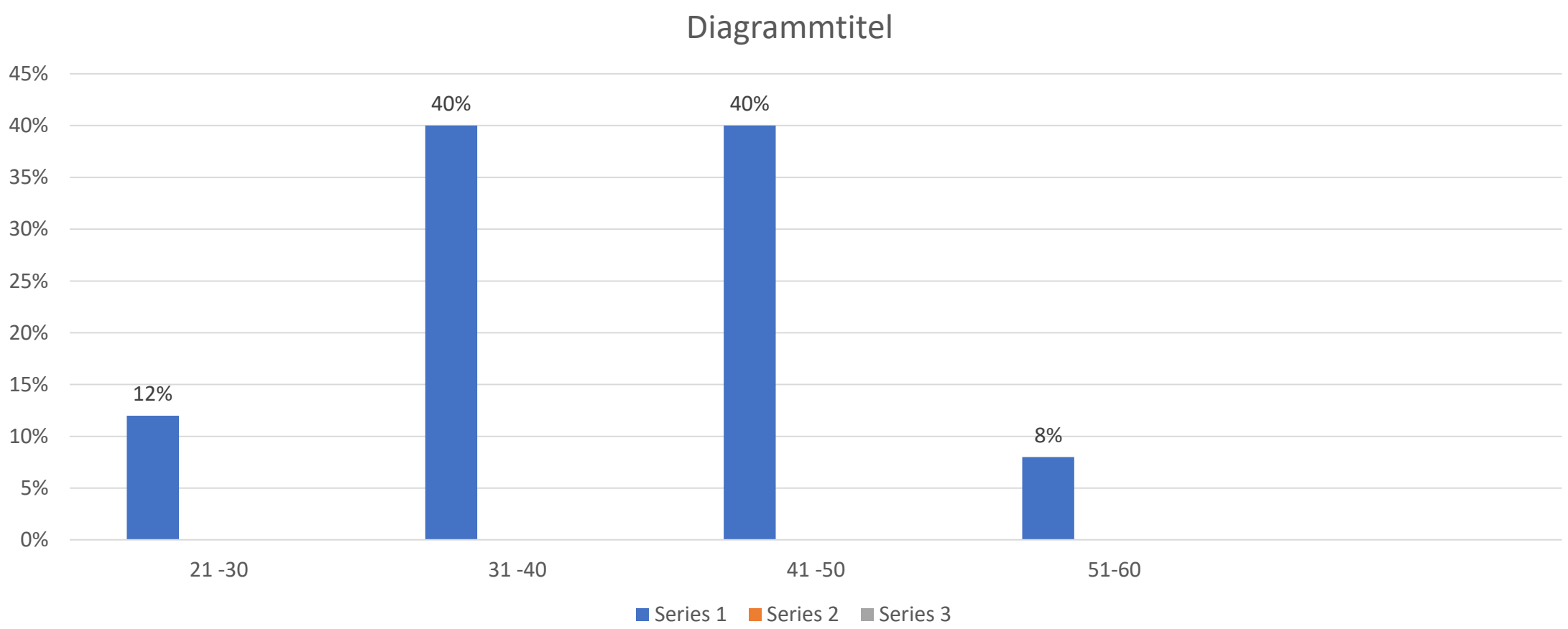


ETIOLOGY OF NEOVASCULAR GLAUCOMA

- PDR 11
- CRVO 6
- CRAO 4
- UVEITIS 2
- RD 2

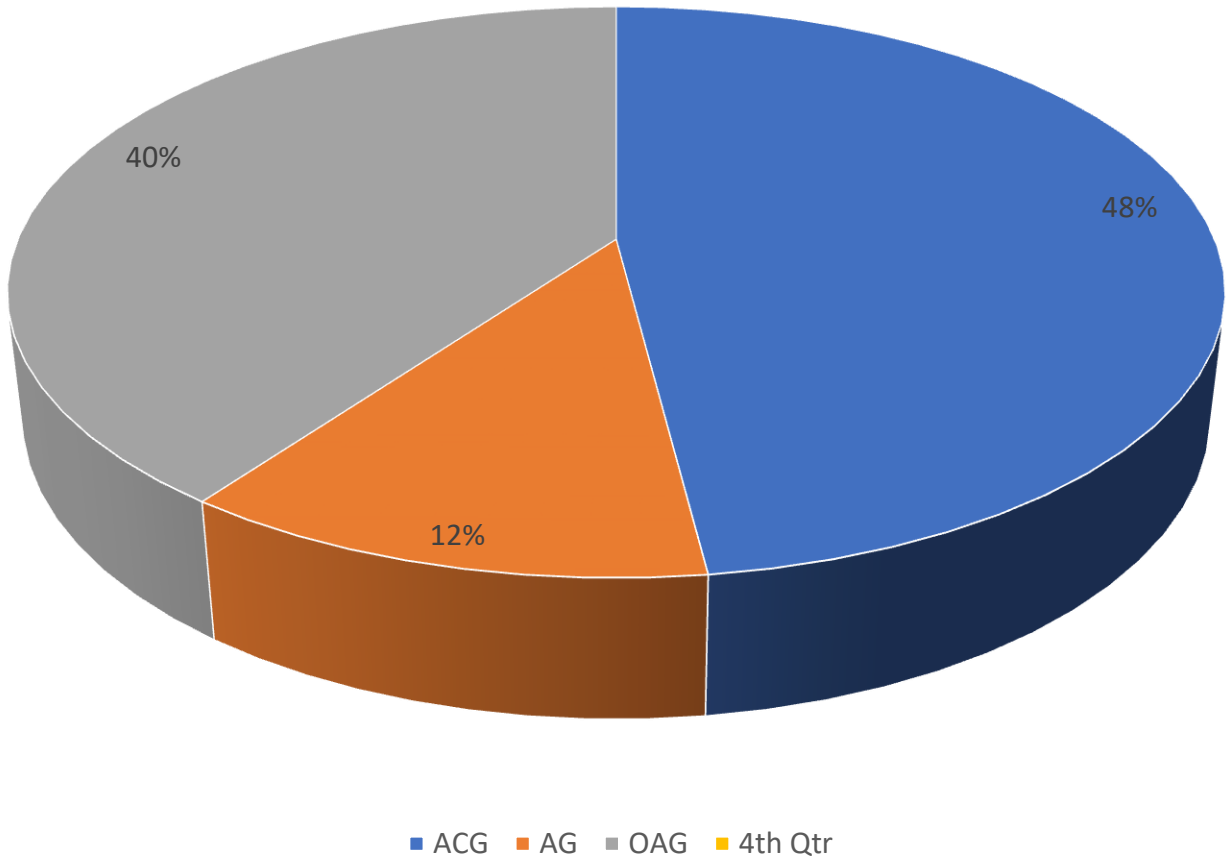


IOP AT PRESENTATION



STAGE OF PRESENTATION

- 48 % - 12 CASES OF ACG
- 40% - 10 CASES OF OAG
- 12 % - 3 CASES OF AG



TREATMENT MODALITES AND OUTCOME

TREATMENT MODALITY	NO. OF PATIENTS	PERCENTAGE	OUTCOME
PRP	4	16 %	>6/60
TRAB + AM	8	32%	<6/60
MEDICAL	4	16%	<6/60
ANTI - VEGF	8	32 %	>6/60
IOL+TRAB+AM	1	4%	<6/60

DISCUSSION

Almost 50% cases were between 61 – 70 years , With Male preponderance with 60%.

PDR was most common cause of NVG in our study out of which 8 cases were males and 3 cases were females.

6 cases were due to CRVO and it is the 2nd most common cause of NVG ,Out of which 4 cases were males and 2 cases were females.

4 cases are due to CRAO.

2 CASES are due to Panuveitis both the cases were males.

Remining 2 cases are due to Retinal detachment and both the cases were males.

- Study was similar to Diabetes control and complication Research group.

- Study was compared to **Iliev et al.** described use of antivegf in 6 cases in NVI and refractory NVG out of them in 3 cases noted marked regression of anterior segment neovascularisation and IOP control.

- Study compared to **Gheith et al**. whom they receive PRP + Anti vegf , all cases had a complete regression of NVI and NVA.

CONCLUSION

- Diabetes mellitus was important underlying cause of NVG .
- Proliferative Diabetic retinopathy followed by occlusive pathology was the most frequent Etiology of NVG.
- Panretinal photocoagulation and Anti VEGF treatment given improved patient vision when compared to other modalities in our observational study

REFERENCES

- Shields Textbook of Glaucoma 4th edition.
- American academy of ophthalmology 2019- 2020.
- Myron Yanoff jay s duker 5th edition.