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# ROLE OF FFA IN THE MANAGEMENT OF RETINAL VENOUS OCCLUSIONS – A CLINICAL STUDY

KEYWORDS

**Dr. G. PREMALATHA**

M.S. ,Assistant Professor, Andhra Medical College.

**Dr. P. Jyothsna**

**Dr. J. Sahiti**

## INTRODUCTION

Retinal vein occlusion is a common vascular disorder.It is the second most common cause of blindness after diabetic retinopathy.It is caused due to obstruction to venous flow.Venous blockade causes back pressure on capillaries leading to endothelial junction dysfunction and leakage of fluid and blood.Severe non perfusion leads to ischemia.

## CLASSIFICATION

- CRVO: Non ischemic
  Ischemic
- BRVO: Major
  Macular
- HRVO:Non ischemic
  Ischemic

## CRVO

It is characterised by sudden painless loss of vision .Site of occlusion is usually at or posterior to the lamina cribrosa. Non ischemic variety is more common than ischemic variety.

## RISK FACTORS

- Age >50 years.
- Hypertension.
- DM.
- Hyperlipidemia.
- Haematological disorders.

## BRVO

- Three times common than CRVO
- Superotemporal branch is most commonly involved.
- IT branch>nasal branches>macular branch in order of involvement.
- Pathogenesis involved 3 mechanisms
- compression of vein at A/V crossing.
- degenerative changes at the vessel wall.
- abnormal hematological factors.

FFA is very useful for detecting

- Capillary Non Perfusion Areas.
- Neovascularisation.
- Macular Edema.
- Macular Ischemia.
- To Differentiate B/N –Ischemic And Non Ischemic varieties.
- Some Times To Differentiate Between Collaterals And New Vessels.

## AIM

To study the role of FFA in management of retinal venous occlusions.

## PATIENTS AND METHODS

50 patients were included in this prospective hospital based study conducted from Jan 2015 to Jan 2016 in the Department of Ophthalmology , Government Regional Eye Hospital, Andhra medical College ,Visakhapatnam.

## INCLUSION CRITERIA

Cases attending the retina clinic, Ophthalmology OPD at Regional Eye Hospital diagnosed as retinal venous occlusions.

## EXCLUSION CRITERIA

- Fluorescein allergy is an absolute contraindication.
- Pregnancy.
- Asthma.
- Systemic diseases like Acute renal failure , Hepatic failure ,CCF.

## METHODOLOGY

- The Institute's Ethics Committee approval was obtained.
- Written informed consent was obtained from all patients.
- Demographic details and a detailed history was taken.
- Patients were subjected to ophthalmic examination and data was recorded in specially designed proforma.
- Investigations included Hb% , RBS ,serum creatinine ,serum lipid profile BP and ECG.
- The details regarding FFA as in :Date and time of administration;
- Dye used, the amount of it and the duration of it administered was noted.
- At followup visit scheduled at 6 weeks,

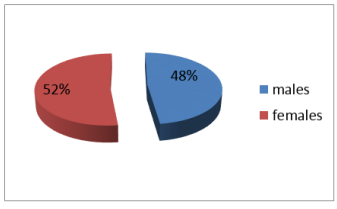
Visual acuity ,slit lamp examination, fundus examination , gonioscopy , IOP recording was done.

## RESULTS

AGE DISTRIBUTION

| AGE | PERCENTAGE |
|---|---|
| 40-50 | 2%(1) |
| 51-60 | 42%(21) |
| 61-70 | 50%(25) |
| >70 | 8%(3) |

**SEX DISTRIBUTION** males were 24 and females were 26.



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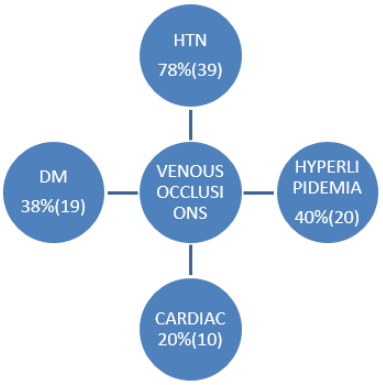
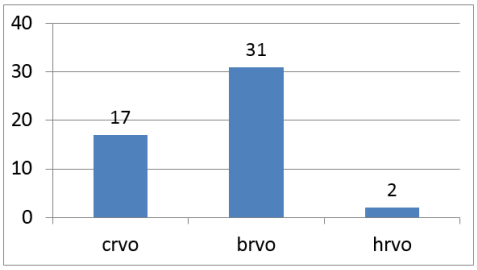
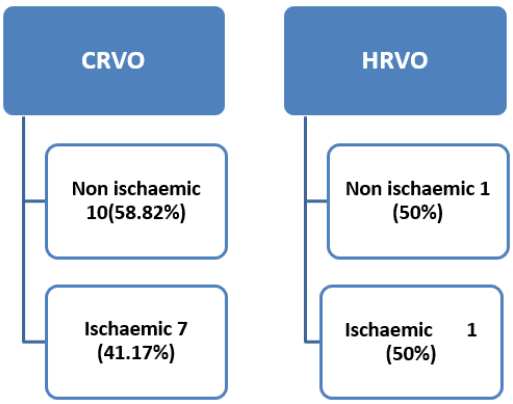
**RISK FACTORS**




**TYPES**

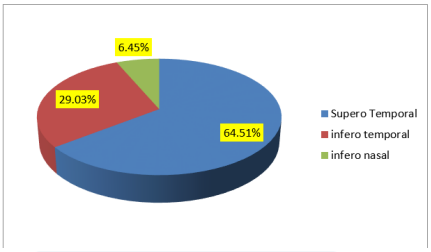


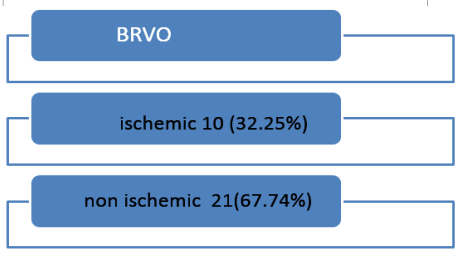

**CLINICAL FINDINGS**




**TYPES OF BRVO**

- SUPERO TEMPORL BRVO:20
- INFERO TEMPORAL BRVO:9
- INFERO NASAL BRVO 2




**FFA FINDINGS in CRVO**

| FFA FINDING | PERCENTAGE |
|---|---|
| delayed venous filling | 100%(17) |
| increased AV transit time | 100%(17) |
| blocked fluorescence | 35.29%(6) |
| disc collaterals | 29.41 %(5) |

| cnp areas | >10DD in 35.29% (6)<br><10 DD in 64.70% (11) |
|---|---|
| late leakage at the macula | 88.23%(15) |
| micro aneurysms | 70.58%(12) |
| FAZ distortion | 23.52%(4) |
| NVD/NVE | 5.88%(1) |

**FFA FINDINGS in BRVO**

| FFA FINDING | PERCENTAGE |
|---|---|
| delayed venous filling | 100%(31) |
| increased AV transit time | 100%(31) |
| blocked fluorescence | 32.25%(10) |
| collaterals | 93.54%(29) |

| cnp areas | >10DD in 25.80% (8)<br><10 DD in 74.19% (23) |
|---|---|
| late leakage at the macula | 38.70%(12) |
| micro aneurysms | 80.64%(25) |
| FAZ distortion | 9.67%(3) |
| NVD/NVE | 19.35%(6) |

**FFA FINDINGS in HRVO**

- cnp areas in 2 cases.
- collaterals seen in 2 case.
- macular edem.a in 1 case.
- NVD in 1 case.

**CRVO**

| | CLINICALLY | FFA |
|---|---|---|
| NON ISCHAEMIC | 10 | 11 |
| ISCHAEMIC | 7 | 6 |

- Neovascularisation of iris and angle was seen in 2(33.33%) cases of ischaemic crvo.

**BRVO**

| | CLINICALLY | FFA |
|---|---|---|
| NON ISCHAEMIC | 21 | 19 |
| ISCHAEMIC | 10 | 12 |

Collaterals in BRVO

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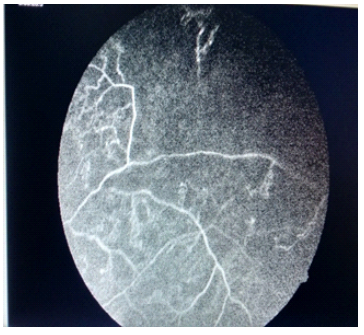
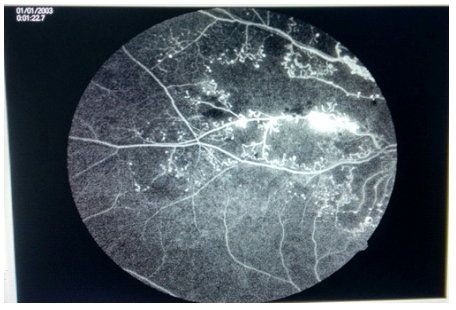
Non ischaemic brvo

FFA in Non ischaemic brvo

ISCHAEMIC brvo

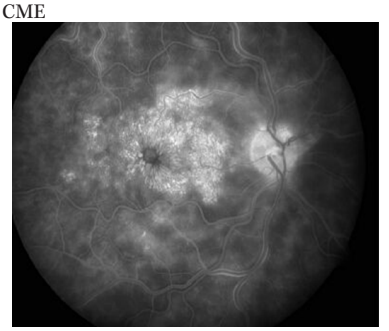


With NVE

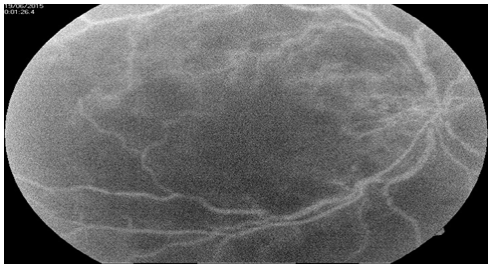


CRVO With NVD

CRVO With CME



Macular Ischaemia



**DISCUSSION**

- FFA plays an important role in diagnosis,management and prognosis of retinal vascular occlusive disorders.
- In 17 cases of CRVO, 6(35.29%)cases were diagnosed as ischaemic variety.because there is higher risk of NVI or NVA close follow up is advised for these cases
- 1case of CRVO where NVD is seen PRP was done.
- 4cases of CRVO in which there is macular ischemia-poor prognosis is explained.
- In 1case of HRVO where NVD is found sectoral photocoagulation advised.
- In 6cases of BRVO where NVE/NVD were found sectoral photocoagulation advised.
- In 3 cases of BRVO where macular ischemia was found poor prognosis was explained.

**CONCLUSION**

- FFA plays an important role in classification,management and prognosis of retinal venous occlusions.
- Even with the advent of investigative modalities like OCT,FFA still place an important role in retinal venous occlusions.
- FFA is still the modality by which we can identify subtle NVE and macular ischemia .

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