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# Original Research

## Evaluation of vitreo- retinal diseases

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***ABSTRACT:***

**Background:** Vitreo-retinal disorders constitute a significant cause of ocular morbidity. The present study was conducted to assess vitreo- retinal diseases. **Materials & Methods:** 58 patients of vitreous retinal diseases of both genders were included. The funduscopic findings were confirmed by binocular indirect ophthalmoscope. Macular and retinal nerve fibre (RNFL) scans were measured using a Spectral Domain OCT. Hypertensive retinopathy (HTR), diabetic retinopathy (DR) and age-related macular degeneration (AMD) was recorded. **Results:** Out of 58, males were 28 and females were 30. The presenting symptoms were headache in 10, watering eye in 12, discomfort eye in 24, floater in 13, poor vision in 6, white eye in 5, trauma in 7 and night blindness in 2 patients. Common vitreo- retinal diseases were retinal detachment in 14, hypertensive retinopathy in 6, diabetes retinopathy in 7, retinal vein occlusion in 20, macular hole in 6, optic nerve involvement in 3 and vitreous haemorrhage in 2 patients. The difference was significant (P< 0.05). The mode of injury was assault in 8, electric wire in 14, road traffic accident in 23 and fall from height in 11 patients. The difference was significant (P< 0.05). **Conclusion:** Common vitreo- retinal diseases were macular hole, optic nerve involvement,retinal detachment, hypertensive retinopathy, diabetes retinopathy, retinal vein occlusion and vitreous haemorrhage.

**Key words:** optic nerve, Hemorrhage, vitreo- retinal diseases

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## INTRODUCTION

Retinal diseases are the major causes of visual impairment in developed countries. Retinal disease has had a low priority in prevention of blindness programmes in developing countries mainly because retinal diseases were considered an uncommon cause of blindness in the developing world.[1] Vitreo-retinal disorders constitute a significant cause of ocular morbidity and vision loss with reported hospital prevalence rates ranging from 4.5% to 13.0%. Previous studies found that causes of low vision are vitreo-retinal diseases which are major public eye health burden.[2] Diabetes mellitus and hypertension are often mentioned as the underlying diseases for the emergence of retinal abnormalities.[3] In Asia alone, problems in VR are estimated to increase as there is an increase in the number of people with diabetes mellitus in 2030.[3]

In spite of the effort and expense involved in acquiring costly equipment and developing skilled human resource for retinal sub specialty, failure in justifying the treatment results of retinal disease has also contributed to the development and strengthening of this assumption.[4]To optimize the allocation of scarce eye care resources, there is a need for research data on the frequency and distribution of retinal diseases, related vision loss, and resource needs for adequate management.[5]The present study was conducted to assess vitreo- retinal diseases.

## MATERIALS & METHODS

The present study consisted of 58 patients of vitreous retinal diseases of both genders. The consent was obtained from all patients.

Data such as name, age, gender etc. was recorded. Intraocular pressure was measured by Goldmann applanation tonometry and the anterior and posterior segments were examined under slit-lamp biomicroscopy and 90D bio-microscopy. Best corrected visual acuity (BCVA) was measured using a Snellen chart. The funduscopic findings were confirmed by binocular indirect ophthalmoscope. Macular and retinal nerve fibre (RNFL) scans were measured using a Spectral Domain OCT.

Hypertensive retinopathy (HTR), diabetic retinopathy (DR) and age-related macular degeneration (AMD) was recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

## RESULTS

**Table I Distribution of patients**

| Total- 58 | | |
|---|---|---|
| **Gender** | **Males** | **Females** |
| Number | 28 | 30 |

Table I shows that out of 58, males were 28 and females were 30.

**Table II Assessment of parameters**

| Parameters | Variables | Number | P value |
|---|---|---|---|
| **Symptoms** | Headache | 10 | 0.05 |
| | Watering eye | 12 | |
| | Discomfort eye | 24 | |
| | Floater | 13 | |
| | Poor vision | 6 | |
| | White eye | 5 | |
| | Trauma | 7 | |
| | Night blindness | 2 | |
| **Vitreo- retinal diseases** | Retinal detachment | 14 | 0.04 |
| | Hypertensive retinopathy | 6 | |
| | Diabetes retinopathy | 7 | |
| | Retinal vein occlusion | 20 | |
| | Macular hole | 6 | |
| | Optic nerve involvement | 3 | |
| | Vitreous haemorrhage | 2 | |

Table II, graph I shows that presenting symptoms were headache in 10, watering eyein 12, discomfort eye in 24, floater in 13, poor vision in 6, white eye in 5, traumain 7 and night blindness in 2 patients. Common vitreo-retinal diseases were retinal detachment in 14, hypertensive retinopathy in 6, diabetes retinopathyin 7, retinal vein occlusion in 20, macular hole in 6, optic nerve involvementin 3 and vitreous haemorrhage in 2patients.The difference was significant (P< 0.05).

**Graph I Assessment of parameters**

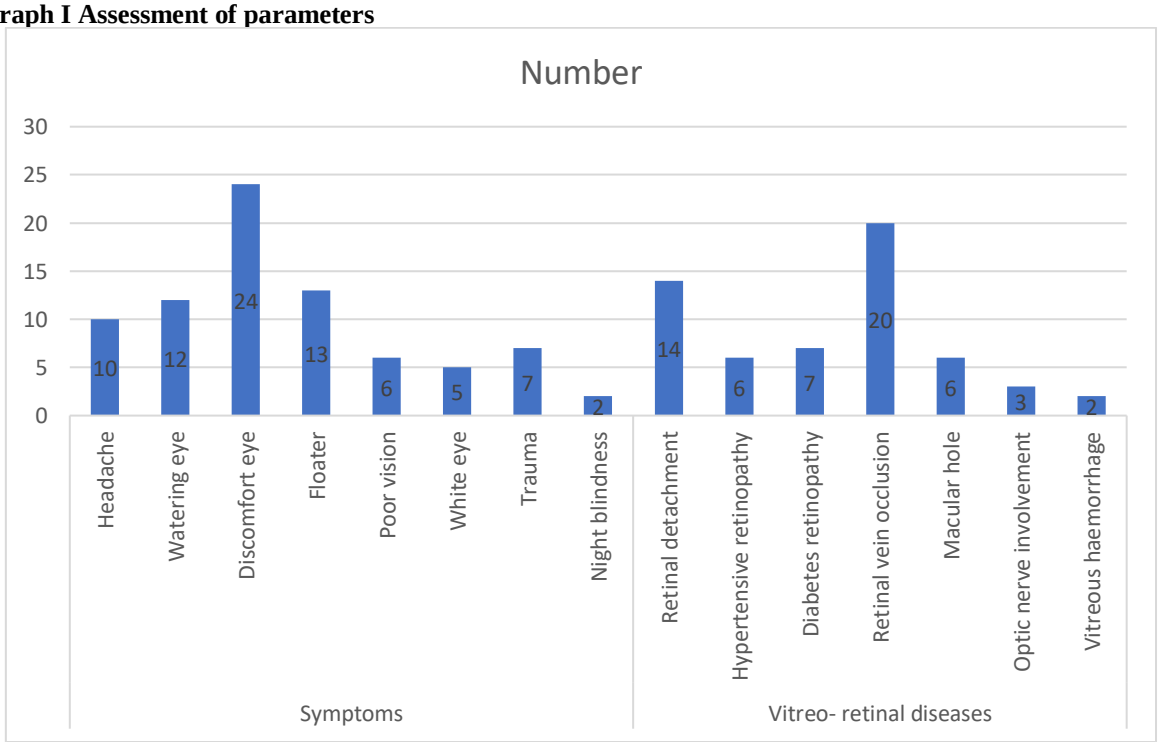

**Table III Assessment of mode of injury**

| Mode of injury | Number | P value |
|---|---|---|
| Assault | 8 | 0.17 |
| Electric wire | 14 | |
| Road traffic accident | 23 | |
| Fall from height | 11 | |

Table III shows that mode of injury was assault in 8, electric wire in 14, road traffic accident in 23 and fall from height in 11 patients. The difference was significant (P< 0.05).

## DISCUSSION

Vitreo-retinal (VR) diseases are common causes of visual impairment and blindness.In developing countries, the leading causes of avoidable blindness are cataract, nutritional blindness, corneal scarring and glaucoma.[6]There has been a significant increase in the burden of vitreo-retinal disorders globally.[7] With increased longevity and increased uptake of cataract surgical services, retinal diseases especially those due to diabetes and AMD are coming up as important causes of blindness and visual impairment.[8]The present study was conducted to assess vitreo- retinal diseases.

We found that out of 58, males were 28 and females were 30.Eze et al[9] determined the rate and pattern of vitreo-retinal diseases at a tertiary eye care center. Diabetic retinopathy (24.9%), hypertensive retinopathy (13.3%), and age-related macular degeneration (10.7%) were the leading vitreo-retinal diseases. Blindness from vitreo-retinal disease was bilateral in 6.1% of subjects and unilateral in 17.5% of subjects. The common co-morbidities were ocular conditions such as refractive error (19.8%), cataract (14.2%), and glaucoma (10.4%); and systemic conditions such as diabetes mellitus (14.6%) and hypertension (13.2%).

We found that presenting symptoms were headache in 10, watering eye in 12, discomfort eye in 24, floater in 13, poor vision in 6, white eye in 5, trauma in 7 and night blindness in 2 patients. Common vitreo- retinal diseases were retinal detachment in 14, hypertensive retinopathy in 6, diabetes retinopathy in 7, retinal vein occlusion in 20, macular hole in 6, optic nerve involvement in 3 and vitreous haemorrhage in 2 patients. Hatef et al[10]determined the prevalence of retinal diseases. The prevalence of retinal diseases was 8.56 per 100. Acquired retinopathies and peripheral retinal lesions were the most common retinal diseases in our population. Cataract was the major ocular comorbidity; high blood pressure and diabetes mellitus were the main systemic comorbidities among 415 patients with retinal diseases. The prevalence of low vision on the basis of best-corrected and presenting visual acuity was 0.63 and 2.87 per 100 in 415 patients with retinal disease. Two patients (0.48 per 100) were blind with corrected and presenting visual acuity. The prevalence of diabetic retinopathy in the studied population was 0.61 per 100 and age-related macular degeneration was detected in 1.95 per 100 of the population.

We found that mode of injury was assault in 8, electric wire in 14, road traffic accident in 23 and fall from height in 11 patients. Teshome et al[11] in their study a total of 1390 new patients with retinal diseases were seen accounting for 12.5% of the total outpatient population of the eye department. The male to female ratio was 1.8: 1. The mean age was 45.2 years +/- 17.3 years (range 2 months to 92 years) and median of 44.5 years. Two hundred and twenty-four (16.1%) patients were bilaterally blind, 465 (33.5%) patients were unilaterally blind, 280 (20.1%) patients had bilateral visual impairment and 195 (14.0%) patients had unilateral visual impairment, while 213 (15.3%) patients had normal vision. Retinal detachment was the commonest cause of both bilateral (54.9%) and unilateral blindness (41.2%), while diabetic retinopathy and myopia were the leading causes of bilateral visual impairment accounting for 36.8% and 28.2% respectively. Retinal vascular diseases accounted for the largest group of patients (38.1%) of which diabetic retinopathy accounted for 75.1%. Retinal detachment was the second largest group of diseases, accounting for 24.5% of the total. The proportion of patients with age-related macular degeneration was only 2.7%. Most of the patients presented with advanced disease, which required vitreo-retinal surgery. There is a need to improve on the early diagnosis and early referral of retinal diseases at primary and secondary care levels. Selected tertiary care centers should develop capacity to provide laser and vitreo-retinal surgery. The introduction of posterior vitrectomy in Ethiopia is long overdue.

## CONCLUSION

Authors found that common vitreo- retinal diseases were macular hole, optic nerve involvement, retinal detachment, hypertensive retinopathy, diabetes retinopathy, retinal vein occlusion and vitreous haemorrhage.

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