

Frequency and Patterns of Retinal Eye Diseases in Outpatient Department of a District Hospital in Bangladesh

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Abstract

Introduction: Retinal diseases especially those due to diabetes and AMD are coming up as important causes of blindness and visual impairment. Our study is to evaluate the frequency and pattern of retinal diseases in ophthalmic outpatient department of a district hospital in Bangladesh. **Materials and Methods:** A total number of 173 referred new retina cases were reviewed at outpatient department of the 250 bedded General Hospital, Jamalpur, Bangladesh, between February 2017 and November 2017. Data was analyzed according to age, sex and clinical diagnoses and detailed fundus evaluation done with binocular indirect ophthalmoscope and slit lamp using 20D and 90D lenses respectively. **Results:** Out of 7164 new patients, of whom 173 patients were (2.42%) presented with retinal diseases. 139 patients were reviewed and followed up. Male: female ratio was 1.24:1. Out of 139 patients 77 (55.4%) were males and 62 (44.6%) females with a peak age group of 41-50 years. Diabetic related retinal conditions were 36 cases (25.9%), the most common cause. 16 (44.44% of total DR) patients had CSME and 5 (14.9%) had ADED. Diabetic retinopathy 36 cases (25.9%), Choriorretinitis 20 cases (14.4%), ARMD 11 cases (7.9%), and Optic atrophy 10 cases (7.2%). **Conclusion:** Retinal diseases remain an important cause of visual morbidity. There is increasing incidence of retinal blindness especially diabetic retinopathy in Bangladesh. The impression based on hospital practice is that the problem is increasing. This entails the necessity for accessible comprehensive eye care services, establishment of human resources, screening and awareness of the disease and affordable eye health policy.

Keywords: Retinal diseases, Retinal detachment, Age related macular degeneration, Diabetic retinopathy, Visual loss, Bangladesh.

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cause of blindness in the developing world². In developing countries like Bangladesh, the leading causes of avoidable blindness are cataract, nutritional blindness, corneal scarring and glaucoma³. With various intervention programmes, the emphasis has been on the elimination of these conditions such as availability of low cost technology resulting in increasing cataract surgical rate, vitamin A distribution and food fortification for corneal scarring from^{4,5} Vitamin A deficiency. All these have resulted in a gradual but definite reduction in the burden of blindness from these conditions. This has also resulted in less attention being paid to retinal diseases leading to late detection with equaling blinding and almost irreversible visual loss from preventable and treatable causes like diabetic retinopathy, retinal detachment and age related macular degeneration (ARMD). There are limited low vision and visual rehabilitation services available for cases with irreversible visual impairment. Recently there has been a significant increase in the burden of vitreo-retinal disorders globally. 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. 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 assumption⁶. Previous reports from hospital based studies and general population surveys of causes of low vision have implicated vitreo-retinal diseases as the major public eye health burden. Population-based surveys reported vitreo-retinal disorders to be responsible for 8.56% and 12.7% in Iran⁷ and India⁸ respectively. The age and sex-adjusted prevalence of vitreo-retinal diseases in Korean adults 50 years of age and older was 9.9%⁹. According to the Pakistan National Survey for blindness and visual

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

impairment done in year 2002-03, posterior segment diseases accounted for 3.4% of total blindness and visual impairment. Retinal diseases vary widely ranging from common but easily treatable to rare and untreatable. The purpose of our study is to generate data on frequency and pattern of retinal disease in patients aged above 16 years presenting at 250 bedded general hospital, Jamalpur.

Materials and Methods:

250 bedded general hospital, Jamalpur, provides secondary level health care to Jamalpur district and its suburbs as well as rural population of far-flung areas of Brahmaputra and Jamuna river. All services are provided free of charge.

A total number of 7164 referred newcases were reviewed at outpatient department of the 250 bedded General Hospital Jamalpur, Bangladesh, between February 2017 and November 2017. Out of them 173 were new retina cases were reviewed. The data was obtained from the ophthalmic outpatient department. Data was analyzed according to age, sex and clinical diagnoses and detailed fundus evaluation done with binocular indirect ophthalmoscope and slit lamp using 20 D and 90 D lenses respectively.

The study was conducted with adherence to institutional policy. Patients’ privacy was maintained by excluding identification names and hospital numbers of patients from data analysis and manuscript preparation.

Results:

Out of 7164 new patients attended in ophthalmic OPD, of which 173 patient were (2.42%) patients presented with retinal diseases. Some patients were lost from follow up. 139 patients were reviewed and followed up. Demographic characteristics of patients (table I) shoes the age range was 1 to 90 years with the peak age group between 41-50 years. 77 (55.4%) were males while 62 (44.6%) were females. The minimum age of the patient registered in retina clinic was 8 years while the maximum age was 88 years. It appeared that the conditions are more common in 41 to 60 years age group. Disease pattern (table-II) shows out of these 139 patients 75(54%) were from rural areas while the rest of the patients 64 (46%) belonged to rural areas. 76 (54.7%) patients had monocular involvement while rest of the 63 (45.3%) patients had bilateral involvement. The common retinal vascular diseases (presented in table II) were diabetic retinopathy/ maculopathy in 36(25.9%), hypertensive retinopathy, 2(1.4%) and retinal vascular occlusion in 11(7.9%) eyes respectively.

Table –I: Demographic characteristics of patients.

Age	Male	Female	Total (%)
≤ 10	1	1	2
11 – 20	4	5	9
21 – 30	7	3	10
31 – 40	12	10	22
41 – 50	20	20	40
51 – 60	14	16	30
61 – 70	13	5	18
71 – 80	5	2	7
≥ 81	1	0	1
Total	77	62	139

Age related macular degeneration and macula hole were the common macula pathologies documented in 37(15.0%) and 10(4.0%) eyes respectively while retinal detachment was the most common condition that required emergency vitreo-retinal surgical intervention in 11(4.5%) eyes. Bilateral visual impairment (low vision and blindness) from retinal diseases was present in 42(30.2%) while unioocular visual impairment was documented in 51(36.7%) persons. The causes of bilateral blindness were age related macular degeneration 8(38.1%), diabetic retinopathy 5(23.8%), chorioretinitis, mostly congenital toxoplasmosis 4(19.0%), retinal detachment 2(9.5%) and retinitis pigmentosa 2(9.5%). Chorioretinitis 20(14.4%) and age related macular degeneration 11(7.9%) were the common macula pathologies documented.

Table – II: Retinal Disease pattern.

Retinal Disease	No. of Patients n (%)	Unilateral n (%)	Bilateral n (%)
Amblyopia	5 (3.6%)	3	2
ARMD	11(7.9%)	6	5
BRVO	5(3.6%)	2	3
Chorioretinitis	20(14.4%)	13	7
Coloboma	4(2.9%)	3	1
CRVO	6(4.3%)	5	1
CSCR	4(2.9%)	3	1
Diabetic Retionopathy	36(25.9%)	13	23
Drusen	2(1.4%)	0	2
Hypertensive retnopathy	2(1.4%)	1	1
Macular dystrophy	4(2.9%)	2	2
Macular Edema	4(2.9%)	3	1
Macular Hole	2(1.4%)	2	0
Myopic degeneration	4(2.9%)	2	2
Optic Atrophy	10(7.2%)	6	4
Optic neuritis	4(2.9%)	1	3
Retinal Detachment	1(0.7%)	9	1
RP	5(3.6%)	2	3
Vasculitis	1(0.7%)	0	1
Total	139(100%)	76(54.7 %)	63(45.3 %)

Discussion:

The retinal disease pattern noted at 250 bedded general hospital, Jamalpur is comparable to those noted at other institutions of the developing world. Vitreo-retinal disorders constituted a significant reason for presentation to eye clinics and eye department of district hospital, ranging from 3.9% in South-Eastern Nigeria¹⁰ to 12.5% in Ethiopia ¹¹. In Nigeria vitreo-retinal disorders constituted a significant cause of ocular morbidity and vision loss with reported hospital prevalence rate of 13.0%¹². A study from Malaysia has also reported retinal diseases to be responsible for 12% of patients presenting to outpatient department of eye units¹³. In our study we found 2.42% patients had vitreo-retinal disorders. This may be due to lack of awareness and socio economic condition of this area. The male to female

ratio was 1.24:1. This is again similar to the study done in Ethiopia¹¹. The higher male attendance of hospitals for healthcare in developing countries contributes to the male preponderance. However greater uptake of cataract surgical service by males may be another reason for increased number of males with retinal diseases. Since the study was aimed to find out the age, sex and diagnostic varieties in order to assess pattern of posterior segment disease in patients presenting at the 250 bedded general hospital, Jamalpur, other demographic and therapeutic details were not included. It appeared that the conditions are more common in 41 to 60 years age group (70%). This is similar to the findings from Nigeria¹² and can be compared to the study done in Malaysia where majority (61.9%) patients were above the age of 50 years. Diabetic retinopathy (25.9%) was the most common cause for attendance in the OPD showing that diabetic eye disease is emerging as a challenge. This is similar to the results from Nepal eye hospital where diabetic related conditions were most common cause for visiting the retina OPD¹⁴. In Malaysia¹³ and Nigeria¹² diabetic retinopathy accounted for 9.7% and 9.6% retinal diseases respectively. This warrants timely screening, evaluation, treatment, follow up and education for diabetic related conditions. Retinal detachment represented 1% of retinal diseases in this study as opposed to only 7% in Nepal, 12% in Malaysia¹³ and Ethiopia 24.5% of diseases.

In our study, ARMD accounted for 7.9% of retinal diseases, which is similar to a hospital based study in Pakistan shows 9.3%¹⁵. This is in contrast to the prevalence of 2.7% AMD from Ethiopia. The age adjusted prevalence of ARMD was 4.72 % in Sri Lanka¹⁶. In the second national blindness survey of Pakistan (2002-2004) macular degeneration accounted for 2.8%². This difference may be due to the fact that the current study was a hospital based study where patients have manifest retinal conditions. It appears that in spite of proliferation of various levels of posterior segment service facilities within the country and even the city the number of attendance in OPD at 250 bedded general hospital, Jamalpur, is on rise. This on one hand stresses and justifies additional investments needed to tackle all kinds of posterior segment eye problems including the ones needing complex vitreo-retinal surgical procedures while on the other recommends general community awareness in order to reduce undue blindness and visual impairment due to avoidable causes.

The results of this study gave an insight into the pattern of retinal eye diseases seen in a district hospital of Bangladesh. However in order to generalize the results it is necessary to conduct a larger multi center study or a population based study.

Conclusion:

There is a tremendous impact of increasing retinal blindness secondary to retinal diseases especially DR in Bangladesh. The impression based on hospital practice is that the problem is on rise. The set up for their evaluation and management especially surgical is expensive and for

average Bangladeshi population the treatment is not affordable unless subsidized by the hospital. This entails the necessity for accessible comprehensive eye care services, establishment of human resources, screening and awareness of the disease and affordable eye health policy.

Conflict of Interest: None.

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