ORIGINAL RESEARCH PAPER

Medical Science

CLINICAL PROFILE OF PATIENTS WITH CORNEAL BLINDNESS: A HOSPITAL BASED STUDY

KEY WORDS: Corneal blindness, infective keratitis, corneal degeneration, corneal grafting, trauma

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ABSTRACT

PURPOSE: To study clinical profile of patients with corneal blindness. **METHODS:** Corneal blindness is a leading cause of blindness in developing countries. Our study was a hospital based, prospective, observational study of 94 patients suffering from corneal blindness. All patients underwent comprehensive ocular examination as well as laboratory investigation. Patients were managed according to underlying etiology. **RESULTS:** Our study included 55 (58.5%) males and 39 (41.5%) females.67.02% patients belong to rural area. 78 (82.97%) patients had unilateral corneal lesion. 47 (42.72%) eyes out of 110 eyes suffered from infective keratitis followed by 21 (19.09%) eyes due to trauma to the eyes. 112(59.57%) eyes out of 188 eyes had visual acuity ≤ 3/60 in the study group. 25 (13.29%) eyes out of 188 eyes had visual acuity between 6/36 – 6/12 while 43(22.87%) eyes had visual acuity >6/9. **CONCLUSION:** our study will help a lot in better understanding of clinical presentations of patients suffering from corneal blindness. We recommend that all the patients suffering from corneal blindness should undergo a comprehensive ocular examination as well as all the possible investigations to determine the underlying etiology which will help a lot in better management of patients with corneal blindness.

INTRODUCTION

Corneal blindness is a leading cause of blindness in developing countries. Etiology of corneal blindness can vary from trivial trauma to chemical injuries, infective keratitis, degenerations and dystrophies or nutritional deficiencies. K. Kalaivani mentioned in their study that keratitis was leading etiological factor associated with development of corneal opacity. They found that infective keratitis was present in 42% of their patients.[1] It is expected that the number of individuals with unilateral corneal blindness in India will increase to 10.6 million by 2020 [2]. Patients with corneal blindness has got so many varied etiologies which keep varying from region to region as well as individual to individual hence considering all these various risk factors our study was designed to study the clinical profile of patients with corneal blindness.

MATERIAL AND METHOD

The present study "CLINICAL PROFILE OF PATIENTS WITH CORNEAL BLINDNESS: A HOSPITAL BASED STUDY" study was a hospital based, prospective, observational study of 94 cases of patients suffering from corneal blindness attending the eye OPD at R. D. Gardi Medical College, Ujjain. A total number of 94 patients were enrolled in the study.

METHODOLOGY

An informed written consent of all patients who were enrolled in the study was taken. All patients underwent comprehensive ocular examination as well as laboratory investigation.

Inclusion Criteria

All patients of Corneal Diseases with

1. Visual Acuity <3/60 in one or both eye.
2. Patients with no associated posterior segment abnormality

Exclusion Criteria

1. Patients with posterior segment abnormality.
2. Patients with dense cataract where posterior segment evaluation is not possible.
3. Pregnancy.
4. Patients with drug allergies.

After registration of all the cases, the preliminary particular of the patient such as name, age, sex, occupation, socio-economic status, education and address were recorded first. Occupation was specifically noted such as office job, labourer, house wife, field worker, driver, student as blindness is linked to occupation of the patient. Socioeconomic status was recorded as to whether patient belonged to low, middle or high socioeconomic group.

The chief complaints were recorded in detail especially diminution of vision, redness of eye, ocular pain, headache, eye involvement whether unilateral or bilateral was recorded. The history of present illnesses were asked in detail including the duration, history of trauma, mode of injury, any previous treatment taken and duration and type of treatment.

Ocular examination of both the eyes was done completely. Visual acuity; unaided, aided, best corrected and pinhole was recorded. Perception of light, direct light reaction and associated adnexal abnormalities was tested with the help of torch light.

RESULTS

Table no. 1 : Age distribution of patients in study group (n=94 patients)

AGE	NUMBER OF PATIENTS	PERCENTAGE
0-20 YEARS	9	9.57
21-40 YEARS	37	39.36
41-60 YEARS	35	37.23
61-80 YEARS	11	11.70
>80 YEARS	2	2.12
TOTAL	94	100

In our study, 9 (9.57%) patients were in the age group of <20 years whereas 85 (90.43%) patients were >20 years of age.

Table no. 2 : Demographic distribution of patients in the study group (n = 94 patients)

AREA	NUMBER OF PATIENTS	PERCENTAGE
URBAN	31	32.97
RURAL	63	67.02
Total	94	100

In our Study,63 (67.02%) belonged to rural areas whereas 31 (32.97%) patients belonged to urban areas.

Table no. 3 : Distribution of etiology leading to corneal

blindness of patients in our study (n = 110 eyes)

ETIOLOGY	NUMBER OF EYES	PERCENTAGE
INFECTIVE KERATITIS	47	42.72
TRAUMA	21	19.09
FAILED GRAFT	6	5.45
TRACHOMA	3	2.72
ANTERIOR STAPHYLOMA	3	2.72
CHEMICAL INJURY	5	4.54
CORNEAL DEGENERATION	5	4.54
CORNEAL DYSTROPHY	4	3.63
NUTRITIONAL DEFICIENCY	2	1.81
IMMUNE RELATED KERATITIS	4	3.63
KERATOCONUS	1	0.90
APHAKIC BULLOUS KERATOPATHY	2	1.81
PSEUDOPHAKIC BULLOUS KERATOPATHY	5	4.54
EXPOSURE KERATOPATHY	2	2.72
TOTAL	110	100

In our study, 47 (42.72%) eyes out of 110 eyes suffered from infective keratitis followed by 21 (19.09%) eyes due to trauma to the eyes, 6 (5.45%) due to failed graft. 5 (4.54%) eyes were affected each due to chemical injury, corneal degeneration, and pseudophakic bullous keratopathy. 4 (3.63%) eyes were involved in corneal dystrophy and immune related, and 3 (2.72%) suffered from trachomatous corneal blindness.

Table no. 4 : Best corrected visual acuity of patients in study group (n = 188 eyes)

BCVA	RIGHT EYE	PERCENTAGE	LEFT EYE	PERCENTAGE
NO PERCEPTION OF LIGHT	1	1.06	1	1.06
PL - HM NEAR FACE	33	35.10	32	34.04
1/60-3/60	27	28.72	18	19.14
4/60-6/60	6	6.38	2	2.12
6/36-6/24	1	1.06	7	7.44
6/18-6/12	3	3.19	14	14.89
6/9-6/6	23	24.46	20	21.27
Total	94	100	94	100

In our study, 112 (59.57%) eyes out of 188 eyes had visual acuity ≤ 3/60 in the study group. 25 (13.29%) eyes out of 188 eyes had visual acuity between 6/36 – 6/12 while 43(22.87%) eyes had visual acuity >6/9.

Table no. 5 : Management done of patients in study group (n = 110 eyes)

MANAGEMENT DONE	NUMBER	PERCENTAGE
MEDICAL	86	78.18
SURGICAL	24	21.81
TOTAL	110	100

In our study group, 86 (78.18%) eyes had undergone medical management and 24 (21.81%) had undergone surgical treatment.

DISCUSSION

Corneal blindness is a leading problem worldwide and our study will also help in better understanding in patients with corneal blindness. We found that 55 (58.5%) patients out of 94 patients were males whereas 39 (41.5%) patients were females. This result of our study shows that corneal blindness is more common in males as compared to females. Result of our study was comparable with study of Dandona R et al (2002) who in their study found that the prevalence of corneal blindness in males was 0.77% while that of females was 0.54%[3]. Devi B et al (2017) in their study they reported an increased number of male patients (66.13%) with corneal blindness whereas females had 33.87% corneal blindness[4]. In our study majority of our patients 63 (67.02%) belonged to rural areas whereas 31 (32.97%) patients belonged to urban areas which suggests that corneal blindness in our study was more common in persons belonging to rural areas. Wei M et al (2010) in their study they found that corneal diseases lead to 6.5% of visual disability. Here 140 (86.95%) out of 161 belonged to rural population and 21 (13.04%) belonged to urban population[5]. Result of our study was comparable with above studies.

We found that 47 (42.72%) eyes out of 110 eyes suffered from infective keratitis followed by 21 (19.09%) eyes due to trauma to the eyes, (5.45%) due to failed graft. 5 (4.54%) eyes were affected each due to chemical injury, corneal degeneration, and pseudophakic bullous keratopathy. 4(3.63%) eyes were involved in corneal dystrophy and immune related, 3 (2.72%) suffered from trachomatous corneal blindness, 2 (2.72%) from exposure keratopathy and 2 (2.72%) were involved in case of vitamin A deficiency. Bowman et al (2002) concluded from a study done in Gambia, Africa that in addition to infectious keratitis (22.7%) and trauma (14.3%), vitamin A deficiency (7.8%) also led to corneal blindness[6]. Tandon et al (2010) in a hospital based study in New Delhi, out of 59 cases of corneal blindess, corneal ulcers constituted 62.5% followed by bullous keratopathy (8.9%), corneal dystrophy (7.1%), chemical injury (5.7%), keratomalacia (5.4%), and corneal degeneration (3.6%)[7]. All the studies including ours suggest that infectitous keratitis is leading cause of corneal blindness. In our study 112(59.57%) eyes out of 188 eyes had visual acuity ≤ 3/60 in the study group. 25 (13.29%) eyes out of 188 eyes had visual acuity between 6/36-6/12 while 43(22.87%) eyes had visual acuity >6/9. Kello B et al (2003) in their study they reported that of 295 cases, 184 (62.4%) had vision <3/60 due to corneal diseases[8]. We found that 86 (78.18%) eyes had undergone medical management and 24 (21.81%) had undergone surgical treatment. Srinivasan N et al (2006) in developing countries with predominant rural population, antibiotic and anti fungal treatment for microbial keratitis are costly leading to poor visual outcome[9]. Dana MR et al (1995) emphasized the role of keratoplasty in management of corneal blindness. They found survival rate of corneal graft to be 80.2% at one year and 67.4% at 2 years[10].

CONCLUSION

To conclude with our study will help a lot in better understanding of clinical presentations of patients suffering from corneal blindness. We recommend that all the patients suffering from corneal blindness should undergo a comprehensive ocular examination as well as all the possible investigations to determine the underlying etiology which will help a lot in better management of patients with corneal blindness.

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