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RESEARCH ARTICLE

A STUDY ON RETINITIS PIGMENTOSA AS A CAUSE OF BLINDNESS IN PATIENTS ATTENDING REGIONAL EYE HOSPITAL, KURNOOL FOR BLIND CERTIFICATE

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Abstract

Aim: To study Retinitis Pigmentosa as a cause of blindness in patients attending Regional Eye Hospital, Kurnool for blind certificate.

Methods: A total of 1020 patients of all age groups attending to Regional Eye Hospital, Kurnool for blind certificate during the period August 2020 to August 2022 were included and examined which include visual acuity testing using Snellen chart, refraction, slit lamp biomicroscopy,intra ocular pressure measurement using Goldmann Applanation Tonometer,fundus examinationwith indirect ophthalmoscope, visual field testing using Humphrey field analyser. Fundus picture was taken using Zeiss fundus camera. Patients having retinal pathology were exclusively included in the study and others were excluded.

Results: Out of 1020 patients, 40 patients had Retinitis Pigmentosa with involvement of both eyes. Of these 40 patients, 23 were males and 17 were females indicating that males were more commonly affected than females. 6 patients had 100% disability, 10 patients had 75% disability, 24 patients had 40% disability.

Conclusion: Retinitis Pigmentosa is one among the non-treatable cause of blindness which results due to consanguineous marriages as it is an inherited eye disease.

Introduction:-

Blindness is a major public health problem in developing countries like India. Some ocular diseases are treatable and others are not. Non-treatable diseases lead to permanent visual handicap which affect an individual, his/her family and the society. The registration as blind/low vision in India is voluntary and it is certified by an ophthalmologist. According to guidelines of the Ministry of Social Justice and Empowerment, Government of India, the minimum degree of disability should be 40% for an individual to be eligible for any concessions or benefit.[(1)]

Among the non-treatable causes of retinal blindness, Retinitis Pigmentosa is one causing permanent blindness. Retinitis Pigmentosa is an inherited, degenerative eye disease that causes severe vision impairment due to the progressive degeneration of the rod photoreceptor cells in the retina. This form of retinal dystrophy manifests initial symptoms independent of age; thus RP diagnosis occurs anytime from early infancy to late adulthood.[(2)]Patients in

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the early stages of RP first notice compromised peripheral and dim light vision due to the decline of the rod photoreceptors.[3] The progressive rod degeneration is later followed by abnormalities in the adjacent retinal pigment epithelium and the deterioration of cone photoreceptor cells. As peripheral vision becomes increasingly compromised, patients experience progressive "tunnel vision" and consecutive optic atrophy and eventual blindness.[4] In adulthood, many people with retinitis pigmentosa become legally blind. Affected individuals may additionally experience defective light-dark adaptations, nyctalopia(night blindness) and the accumulation of bony spicules in the fundus.

Materials And Methods:-

The present study was conducted on 1020 patientswho attended Regional Eye Hospital, Kurnool for blind certificate during the period August 2020 to August 2022. Patients of all age groups were included in the study.

All patients who were included in the study underwent Visual acuity testing using Snellen chart. Distance and near visual acuity, both presenting and best corrected after refraction, were measured for each eye separately using Snellen chart.[5]Objective refraction was performed with a streak retinoscope, followed by subjective acceptance with which the best corrected acuity was measured and recorded. External eye examination, assessment of pupillary reaction and anterior segment examination were done with slitlamp biomicroscope. For all participants, pupils were dilated with mydriatics and after dilatation, the lens was examined with the slit lamp and posterior subcapsular cataracts were graded using the Wilmer Classification.[6]Intra ocular pressure was recorded using Goldmann Applanation Tonometry. IOP was raised in 3 of them. Stereoscopic fundus examination, including assessment of the vitreous, retina and optic disc was done at the slitlamp using 78 diopter lens and with the indirect ophthalmoscope using 20 diopterlens. Cellophane maculopathy and Cystoid Macular Edema are seen in some of the cases.Fundus picture was taken using Zeiss fundus camera in patients with retinitis pigmentosa.

Results:-

Table 1:- Effect of age and sex.

Age	Males	Females	Total
0-10	5	2	7 (17.5%)
11-20	3	5	8 (20%)
21-30	9	3	12 (30%)
31-40	2	3	5 (12.5%)
41-50	1	3	4 (10%)
>50	3	1	4 (10%)
	23 (57.5%)	17 (42.5%)	40 (100%)

Table 2:- Percentage disability according to sex.

	40%	75%	100%	Total
Males	15	6	2	23 (57.5%)
Females	9	4	4	17 (42.5%)
	24	10	6	40 (100%)

Table 3:- Complications of Retinitis Pigmentosa.

	Males	Females	Total
Posterior subcapsular cataract	8	4	12
Chronic simple glaucoma	2	1	3
Cellophane Maculopathy	1	1	2
Cystoid Macular Edema	2	1	3

Discussion:-

Blindness defined as presenting visual acuity <6/60 in the better eye; Best corrected visual acuity <3/60 and/or less than 10 degree visual field in better eye. Among the retinal causes of blindness, retinitis pigmentosa constitute one

of the non-treatable causes of blindness. In our study conducted on 1020 patients, 40 patients were found to have retinitis pigmentosa. Of these 40 patients, 23 (57.5%) were males and 17 (42.5%) were females indicating that retinitis pigmentosa is more common among males compared to females. 12 (30%) among 40 persons were found between the age group 21-30 indicating that it was the most common age group to be involved.
Regarding the percentage of disability, 24 patients had 40% disability, of which 15 were male patients and 9 were female patients. 10 patients had 75% disability, of which 6 were males and 4 were females. 6 patients had 100% disability of which 2 were males and 4 were females. A study conducted by Joshi et al reported that retinitis pigmentosa constituted 15.05% of blindness amongst patients attending outpatient department of a medical college for visual handicap certificate in central India.[7]

In 12 patients, Posterior sub capsular cataract was found. After explaining guarded visual prognosis, Phacoemulsification was done for them. There is vision improvement in 5 of them and no vision improvement for the remaining cases.

A study done on RP patients in various states of India has shown an autosomal- recessive, predominant inheritance pattern, and more than 92% of cases in autosomal- recessive category had positive history of consanguinity. RP is a major cause of blindness in Southern India, with a prevalence of 1 in 1000 in the state of AndhraPradesh.[8] Clinically, patients with history of consanguinity in the family showed maximum number of early onset severe case. Although the number of patients with autosomal recessive non consanguineous pattern was too small, early and senile onset of disease was not seen. These patients had characteristic symptoms of headache, giddiness, flashes of light and worsening of symptoms after any stress or strain. The autosomal dominant patients had slowly progressive disease taking over 10-15 years.

Conclusion:-

Retinitis Pigmentosa is an inherited disease runs in the families need utmost care to reduce the burden on prevalence of blindness as it is one among the non-treatable cause of blindness and as there are no specific treatment modalities to cure. Hence, we need to concentrate more on genetic counselling to reduce consanguineous marriages.

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