ORIGINAL ARTICLE

DEMOGRAPHIC PROFILE EVALUATION OF OF PATIENTS WITH PRESBYOPIA AND PRESBYCUSIS

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ABSTRACT:

Introduction: Presbyopia is a progressive condition where the ability to focus on near objects is gradually lost as part of the natural aging process. Similarly, hearing loss is the most widespread sensory impairment in aging people. Thus, the present study was conducted to study the demographic profile of patients with presbyopia and presbycusis. Material and methods: The Study was conducted on 60 patients reporting to the Eye OPD of Regional Eye institute, Amritsar. Examination of total 120 eyes and 120 ears were conducted to evaluate presbyopia and presbycusis. To check the status of vascular system the investigations done were blood pressure, haemoglobin, total leucocytes count, differential leucocytes count, fasting blood sugar, lipid profile, ECG and urine complete examination. Obtained data was arranged according to characteristics and was expressed as a number and percentage of respondents and were analyzed using the SPSS Version 17 software. Results: Females dominated among the cases of presbyopia while males were dominated among the cases having presbycusis. Maximum cases of presbyopia were seen in service class while no significant difference in hearing was observed among cases in various occupations. No significant difference in near vision and hearing was observed in smokers and alcoholics. Conclusion: Both the condition of presbyopia and presbycusis increased gradually with the age but no relationship was found between arterial hypertension, blood sugar level, serum cholesterol level and consumption of tobacco and alcohol. No significant difference in hearing was observed among cases in various occupations.

Keywords: Audiometry, Presbyopia, Presbycusis.

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NTRODUCTION

Presbyopia is a progressive condition where the ability to focus on near objects is gradually lost as part of the natural aging process. Presbyopia tends to manifest itself around the age of 40 to 45 years, at an extremely productive stage in life and its inadequate correction will compromise a person's work performance with the economic loses that this entails.¹ It has been described as "an irreversible optical failure, an unexplained evolutionary blunder that comes as a psychologic shock.² Similarly, most is the hearing loss widespread sensory impairment in aging people. Age-related hearing loss is primarily a hearing loss related to functional loss of sensory and neural elements, comparable to macular degeneration in the visual system rather than what is referred to as presbyopia. which is related to conductive disturbances of the optical system. Presbyopia can be corrected

relatively easily by near vision spectacles, whereas presbyacusis exhibits multifaceted aspects also involving changes in neural structures responsible for central auditory processing.³ Thus, the present study was conducted to study the demographic profile of patients with presbyopia and presbycusis.

MATERIAL AND METHODS

The Study was conducted on 60 patients reporting to the Eye OPD of Regional Eye institute, Amritsar. Examination of total 120 eyes and 120 ears of randomly selected 60 patients registered with outpatient department due to eye problem in age between 40-72 years was carried out. These Cases were divided into 4 groups according to age with 15 patients in each group. Group 1 includes cases with age between 40-48 years, Group II includes cases with age between 49-56 years, Group III includes cases with age between 57-64 years and Group IV includes cases with age between 65-72 years. Distant vision was tested by Snellen's chart at a distance of 6 meters. Near point test was done monocularly, measurement was done with the distant manifest refraction in place and root of nose was taken as point of reference. The near point card attached on the ruler was presented at distance of 50 centimetres, as the card was drawn nearer toward eve the point where blurring of smallest letter starts is noted and measured in centimetres and dioptres. Any person with near point more than 30 centimetres was considered as case of presbyopia.Pure tone audiometry test was used to evaluate presbycusis. To check the status of vascular system the investigations done were blood pressure, haemoglobin, total leucocytes count, differential leucocytes count, fasting blood sugar, urine complete profile, ECG and lipid examination.Obtained data was arranged according to characteristics and was expressed as a number and percentage of respondents and were analyzed using the SPSS Version 17 software

RESULTS

Out of 60 presbyopia patients, 30 patients were suffering from presbycusis (table 1).Age wise distribution of cases showed that hearing loss increases with the increase in age.

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GROUP	PRESBYOPIA	PRESBYCUSIS
Ι	15	3(20%)
II	15	6(40%)
III	15	9(60%)
IV	15	12(80%)
TOTAL	60	30(50%)

Table	2:	Sex	wise	distributions	of	cases	of
presby	opia	and th	ne case	s of presbycus	is		

SEX	PRESBYOPIA		PRESBYCUSIS		
	No.	%Age	No.	%age	
MALE	24	40	18	30	
FEMALE	36	60	12	20	
TOTAL	60	100	30	50	

Incidence of presbyopia in females was 60% of which 20% showed changes related to presbycusis (table 2). Incidence of presbyopia in males was 40% of which 30% showed changes related to presbycusis. Females dominated the study among the presbyopia cases while males were found to dominate among the presbycusis cases.

 Table 3: Distribution of patients according to occupation

OCCUPATION	PRES	SBYOPIA	PRES	PRESBYCUSIS	
	No.	%age	No.	%age	
Labourer	1	1.7	1	1.7	
Farmer	6	10	6	10	
House Wife	12	20	8	13.3	
Service Man	18	30	6	10	
Stitiching	13	21.7	3	5	
Businessman	3	5	2	3.3	
Retired Service	7	11.7	4	6.7	
Man					
TOTAL	60	100	30	50	

Incidence of presbyopia was maximum in service class (30%) (table 3) and minimum in labourers (1.7%), incidence of presbycusis was maximum in house wives (13.3%) and minimum in labourers(1.7%). 31.7% cases were alcoholic of which 15% showed changes related to presbycusis, 8.3% cases were smokers of which 3.3% showed changes related to presbycusis (table 4).

Table 4:	Smoking	and a	lcohol	drinking	habits
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HABITS	PRES	BYOPIA	PRESBYCUSIS	
	No.	%Age	No.	%Age
SMOKERS	5	8.3	2	3.3
ALCOHOLICS	19	31.7	9	15
NON SMOKERS	36	60	19	31.7
NON ALCOHOLICS				
TOTAL	60	100	30	50

GROUPS	MEAN	BLOOD	MEAN	FASTING	MEAN	SERUM
	PRESSURE (mi	n of Hg)	BLOOD SU	JGAR (mg %)	CHOLEST	EROL (mg %)
Ι	128/84		87		125	
II	136/86		90		160	
III	138/90		93		181	
IV	140/96		110		199	

Table 5: Laboratory investigations

It was evident from the study that mean blood pressure, fasting blood sugar and serum cholesterol increases with age (table 5).

DISCUSSION

The present study reported that females dominated among the cases of presbyopia while males were dominated among the cases having presbycusis. Maximum cases of presbyopia were seen in service class while no significant difference in hearing was observed among cases in various occupations. No significant difference in near vision and hearing was observed in smokers and alcoholics. Ankur et al⁴ conducted a study on effect of age and sex on hearing and reported mild degree of hearing loss was observed in both men and women at middle and olderage groups, percentage of males having hearing loss was more than women and also found that with advancing age loss of hearing threshold is less in lower frequencies inmen as compared to women whereas with advancing age loss of hearing threshold in higher frequenciesis more in men than women, statistically the results were highly significant.Hickenbotham A et al⁵ conducted metaanalysis of the literature and revealed that females might have a greater risk for presbyopia than males of equivalent age, the smaller group analysisof near add powers for presbyopic prescriptions showed thatwomen have a need for higher-power near adds than do men of an equivalent age. This finding is particularly important whencombined with evidence that women in developing countriesmight often be underserved in receiving near-vision spectacles.

Multiple factors such as low socioeconomic status, noise exposure, ototoxins (eg, aminoglycosides, chemotherapeutic agents, heavy metals), infections, smoking, hypertension, diabetes, vascular disease, immunologic disorders, and hormonal factors (eg, estrogen) can contribute to the onset and severity of presbycusis. A genetic component also predisposes individuals to age-related hearing loss.⁶ Itoh A et al⁷ evaluated smoking and drinking habits as risk factors for hearing loss in the elderlyand that smokers reported current showed а significantly increased risk of hearing loss compared with non-smokers (odds ratio after

potential adjustment for sex, age, and (1.53 - 2.89)),heavy confounders=2.10 while drinkers did not show an increased risk compared to non-drinkers.Keles E et al⁸ compared serum level of metabolic presbycusis patients and control group and reported that total cholesterol was found to be statistically significantly high. This condition puts forth that especially diet and life style are very important with regard to presbycusis.

The present study does not found significant difference in hearing loss among smokers and alcoholics. However, the small proportion of study patients suffering from presbycusis could attribute to the variation in the results in relation to various studies. Hence further there is a need to evaluate presbycusis with large sample size.

Patients experience the initial symptoms of presbyopia at an age when more frequent ocular health examinations are recommended because of higher risk for many age-related diseases (e.g., glaucoma, cataract, macular degeneration, diabetes mellitus, hypertension). It is important to identify and manage co-existing vision problems or ocular disease. Early diagnosis and intervention in other systemic diseases identified in the process of caring for the presbyopic patient have public health ramifications.²

CONCLUSION:

Both the condition of presbyopia and presbycusis increased gradually with the age.Females dominated the study among the presbyopia cases while males were found to dominate among the presbycusis cases.Maximum cases of presbyopia were seen in service class while no significant difference in hearing was observed among cases in various occupations. No significant difference in near vision and hearing was observed in smokers and alcoholics.

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