Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies ***NLM ID:*** *101716117*

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr Indian Citation Index (ICI) Index Copernicus value = 100

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Presenile cataract and its risk factors

[1]Aditya Negi, [2]Seema Negi

[1]MO Ophthalmology, Civil Hospital, Rohru, HP, India;
[2]JR Dermatology, PGI, Chandigarh, India

ABSTRACT:
Background: This study was conducted to assess the risk factors of presenile cataract. **Material and methods:** This study comprised of 20 subjects who had cataract. The study procedure was explained to all the subjects and they were asked to give consent. All the subjects agreed to give consent and hence, were included in the study. The risk factors of presenile cataract were evaluated and the results were tabulated. Statistical analysis was conducted using SPSS software. **Results:** In this study, there were 4 females and 16 males. Smoking was the risk factor for 3 subjects. Eye injury was the most common risk factor accounting for 12 cases. Hypertension was the risk factor for 4 subjects. Diabetes mellitus was risk factor for 1 patient. **Conclusion:** The most common risk factor of presenile cataract in this study was eye injury. Other risk factors were smoking, hypertension and diabetes mellitus.
Keywords: Presenile cataract, risk factors, eye injury.

Received: 23 December, 2023 Accepted: 25 January, 2024

Corresponding author: Seema Negi, JR Dermatology, PGI, Chandigarh, India

This article may be cited as: Negi A, Negi S. Presenile cataract and its risk factors. J Adv Med Dent Scie Res 2024;12(2):43-45.

INTRODUCTION

Cataract refers to the opacification of the eye's lens, resulting in diminished visual acuity. This condition predominantly affects older individuals. Age-related senile cataract is the most prevalent ocular disorder leading to visual impairment and is a significant cause of preventable blindness globally, representing approximately 48% of all cases of blindness.[1-3]

The incidence of cataract is observed to be greater in females than in males across both developed and developing nations. In developing regions, cataracts tend to manifest at a younger age.[4] Epidemiological studies have indicated that the prevalence of cataracts in India is notably higher than that in Western populations. Various environmental, nutritional, and genetic factors may contribute to these elevated rates; however, there remains a paucity of comprehensive data regarding these influences within the Indian context.[5]

This study was conducted to assess the risk factors of presenile cataract.

MATERIAL AND METHODS

This study comprised of 20 subjects who had cataract. The study procedure was explained to all the subjects and they were asked to give consent. All the subjects agreed to give consent and hence, were included in the study. The risk factors of presenile cataract were evaluated and the results were tabulated. Statistical analysis was conducted using SPSS software.

RESULTS

Table 1: Gender-wise distribution of subjects

Gender	Number of subjects	Percentage
Males	16	80
Females	04	20
Total	20	100

In this study, there were 4 females and 16 males.

Table 2: Risk factors of presenile contract

Risk factors	Number of cases	Percentage
Smoking	03	15
Eye injury	12	60
Hypertension	04	20
Diabetes Mellitus	01	05
Total	20	100

Smoking was the risk factor for 3 subjects. Eye injury was the most common risk factor accounting for 12

cases. Hypertension was the risk factor for 4 subjects. Diabetes mellitus was risk factor for 1 patient.

DISCUSSION

Cataract, caused by degenerative changes in the lens, is a major cause of blindness globally, and often occurs after 50 years of age.[6] The Lens Opacification Classification System III (LOCS), the most commonly used grading system for evaluating cataract, grades cataract by nuclear color and opacity, cortical opacity, and posterior subcapsular opacity.[7]

Pentacam Nucleus Staging (PNS) using PentacamScheimpflug (Oculus, Wetzlar, Germany)[8]images is a quantitative method of measuring nuclear cataract that provides average and maximal lens density.[9]Pentacam imaging system is effective in screening cataract patients and has the potential to be applied in health examination. The correlation between PNS and LOCS III has been revealed in many studies, especially in nuclear cataract.[10] PNS detects early nuclear cataract and quantitatively analyzes nuclear cataract.

This study was conducted to assess the risk factors of presenile cataract.

In this study, there were 4 females and 16 males. Smoking was the risk factor for 3 subjects. Eye injury was the most common risk factor accounting for 12 cases. Hypertension was the risk factor for 4 subjects. Diabetes mellitus was risk factor for 1 patient.

Das GK et al[11]This study was conducted to determine the various types of presenile cataract and to determine the probable risk factors associated with the occurrence of presenile cataract.Patients in the age group of 18–40 years attending the Out-Patient Clinic of the Ophthalmology Department who were found to have presenile cataract were recruited as cases. An equal number of consecutive patients of the same age group were included in the control group. Those who gave consent to participate in the study were interviewed through a preformed questionnaire and underwent a complete ocular examination and set of blood investigations. The type of cataract was noted, data obtained were compiled, and examination and investigations done were documented and analyzed using frequency distribution and Chi-squared test.In total, 90 cases and 90 controls that fulfilled the inclusion criteria were recruited. Most common type of cataract was found to be posterior subcapsular cataract. Presenile cataract was observed to be significantly associated with tobacco intake (P = 0.035), hypercholesterolemia (P = 0.002), fuel exposure (P = 0.004), and lower socioeconomic status. Tobacco chewing, hypercholesterolemia, and excessive fuel exposure are risk factors for early development of cataract.

Nam SW et al.[12]identified risk factors for the development of presenile nuclear cataract in health screening test.The cross-sectional study included a total of 532 eyes of 266 participants aged 30 to 49 years of Samsung Medical Center from February 2013 to April 2015. Presence of nuclear cataract was defined when the log MAR visual acuity with correction was greater than or equal to 0.2 and one or more of the following were met: Pentacam Nuclear Staging (PNS) grading score ≥ 1, average value of nuclear density $\geq 15\%$, maximum value of nuclear density $\geq 30\%$. Possible risk factors were obtained from blood tests and questionnaires of a health screening test of Samsung Medical Center. Association between nuclear cataract and risk factors was investigated using univariate and multivariate logistic regression analysis by generalized estimating equation (GEE) models.Five factors were significantly associated with presenile nuclear cataract: current smoking, non-exercise and high amount of daily physical exercise, asthma, tuberculosis, and higher total iron binding capacity.Presenile nuclear cataract is related to current smoking, non-exercise or high amount of physical exercise, asthma, tuberculosis, and iron deficiency status. The association of non-exercise group and presenile nuclear cataract seems to be related to co-morbidity. Patients with asthma, tuberculosis, or iron deficiency anemia are recommended to receive frequent ophthalmic examination to detect cataract.

CONCLUSION

The most common risk factor of presenile cataract in this study was eye injury. Other risk factors were smoking, hypertension and diabetes mellitus.

REFERENCES

1. Abraham AG, Condon NG, Emily WG. The new epidemiology of cataract. Ophthalmol Clin N Am. 2006;19:415–25.
2. Resnikoff S, Pascolini D, Etya'ale D. Global data on visual impairment in the year 2002. Bull World Health Organ. 2004;82:844–51.
3. Lewallen S, Courtright P. Gender and use of cataract surgical services in developing countries. Bull World Health Organ. 2002;80:300–3.
4. Abou-Gareeb I, Lewallen S, Bassett K, Courtright P. Gender and blindness: A meta-analysis of population-based prevalence surveys. Ophthalmic Epidemiol. 2001;8:39–56.
5. Pokhrel AK, Smith KR, Khalakdina A, Deuja A, Bates MN. Case control study of indoor cooking smoke exposure and cataract in Nepal and India. Int J Epidemiol. 2005;34:702–8.
6. Thylefors B. The World Health Organization's programme for the prevention of blindness. Int Ophthalmol. 1990;14(3):211–219.
7. Chylack LT, Jr, Wolfe JK, Singer DM, Leske MC, Bullimore MA, Bailey IL, Friend J, McCarthy D, Wu SY. The Lens opacities classification system III. The longitudinal study of cataract study group. Arch Ophthalmol (Chicago, Ill:1960) 1993;111(6):831–836.
8. Datiles MB, 3rd, Magno BV, Freidlin V. Study of nuclear cataract progression using the National eye Institute Scheimpflug system. Br J Ophthalmol. 1995;79(6):527–534.
9. Lim DH, Kim TH, Chung ES, Chung TY. Measurement of lens density using Scheimpflug

imaging system as a screening test in the field of health examination for age-related cataract. Br J Ophthalmol. 2015;99(2):184–191.
10. Grewal DS, Brar GS, Grewal SP. Correlation of nuclear cataract lens density using Scheimpflug images with Lens opacities classification system III and visual function. Ophthalmology. 2009;116(8):1436–1443.
11. Das GK, Boriwal K, Chhabra P, Sahu PK, Kumar S, Kumar N. Presenile cataract and its risk factors: A case control study. J Family Med Prim Care. 2019 Jun;8(6):2120-2123.
12. Nam SW, Lim DH, Cho KY, Kim HS, Kim K, Chung TY. Risk factors of presenile nuclear cataract in health screening study. BMC Ophthalmol. 2018 Oct 11;18(1):263.