Original Article

Cataract Risk Factors in Yazd Province, Iran

Mohsen Gohari [1], MD; Farsad Noorizadeh [2], MD; Mohammad Taghi Moravvej [*3], MD; Fatemeh Zaremohazabiye [3], MD; Haniye Momeniasl [3], MD

1. Department of Ophthalmology, Geriatric Ophthalmology Research Center, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.
2. Basir Eye Health Research Center, Basir Eye Clinic, Tehran, Iran.
3. Department of Ophthalmology, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.

***Corresponding Author:** Mohammad Taghi Moravvej

E-mail: mohammadmoravej.mm@gmail.com

Article Notes:

Received: Aug. 1, 2016

Received in revised form: Aug. 26, 2016

Accepted: Sept. 15, 2016

Available Online: Sept. 24, 2016

Keywords:

Cataract

Risk factor

Yazd

Iran

Abstract

Purpose: To determine the probable cataract risk factors in Yazd province, Iran.

Patients and Methods: In this cross-sectional study patients over 40 years old undergoing cataract surgery in Shahid Sadoughi hospital, Yazd, Iran, from January to September 2016 were evaluated. A checklist was filled for all patients including information about their sex, age, weight, height, place of living (city or village), being native or non-native of Yazd, type of job, the level of household income, level of education, smoking habits, drug usage, as well as a history of related diseases such as high blood pressure, diabetes mellitus, glaucoma, rheumatism, kidney, and heart diseases.

Results: Two hundred and fifty four patients (45.8 %) had income of less than 6,000,000 Rials per month, 270 (48.6 %) had income of between 6,000,000 and 10,000,000 Rials per month and the rest of patients (5.6 %) had an income of over 10,000,000 Rials per month. Regarding the education level 512 patients (92.3 %) had less than high school diploma, 38 (6.8 %) had high school diploma and 5 patients had university education. Eighteen patients (3.2 %) had a history of glaucoma. From 437 patients who their BMI was recorded 4.8 % had a BMI of under 18, 49.7 % had a BMI of between 18 and 25 and 45.5 % had a BMI of over 25.

Conclusion: Our study suggests a relationship between the income and education level as well as BMI and the prevalence of cataract among patients in Yazd province, Iran. Future case control trials, with higher number of participants, are recommended.

How to cite this article: Gohari M, Noorizadeh F, Moravvej MT, Zaremohazabiye F, Momeniasl H. Cataract Risk Factors in Yazd Province, Iran. Journal of Ophthalmic and Optometric Sciences. 2016;1(1):42-6.

Introduction

About 90 % of cataract cases are reported from developing countries causing a high social and economic impact and it is one of the main causes of blindness in the world [1]. The importance of cataract is increasing due to aging societies showing higher incidence of cataract, so prevention can play a significant role in reducing the incidence of cataract related complications [2].

Cataract is a multifactorial disease. In a recent review it was suggested that 47.8 % of all people over 50 years old suffer from different degrees of cataract [2]. The same study found that age, diabetes mellitus and smoking are some risk factors for developing cataract [2]. The incidence of cataract in Iran was reported to be 1264 per 1 million people in 2005 and the prevalence of the disease has been reported to be between 16 to 46 percent among population older than 50 years [3].

Given that there is no recently conducted study on cataract risk factors in Yazd province, Iran, the present study was undertaken to determine the probable risk factors among our population.

Patients and Methods

In this cross-sectional study all patients over 40 years old undergoing cataract surgery in Shahid Sadoughi hospital, Yazd, Iran, from January to September 2016 were evaluated. In total 555 patients entered the study. The study was approved by the local ethics committee and informed consent was obtained from all participants.

A checklist was filled for all patients including information about their sex, age, weight, height, place of living (city or village), being native or non-native of Yazd, type of job, the level of household income, level of education, smoking habits, drug usage, as well as a history of related diseases such as high blood pressure, diabetes mellitus, glaucoma, rheumatism, kidney, and heart diseases.

This data was analyzed using SPSS software (version 17, SPSS Co, Chicago, IL). Descriptive data were expressed as percentage and average.

Results

In the present study, 555 patients were enrolled including 266 (51.6 %) male and 258 (48.6 %) female patients (Table 1). In thirty one cases the sex was not recorded.

Two hundred and fifty four patients (45.8 %) had income of less than 6,000,000 Rials per month, 270 (48.6 %) had income of between 6000000 and 10,000,000 Rials per month and the rest of patients (5.6 %) had an income of over 10,000,000 Rials per month. Regarding the education level 512 patients (92.3 %) had less than high school diploma, 38 (6.8 %) had high school diploma and 5 patients had university education. Eighteen patients (3.2 %) had a history of glaucoma.

Table 2 summarizes the patients' systemic diseases. Two hundred and ninety seven patients (53.5 %) had a history of surgery with 118 patients (39.5 %) reporting a history of eye related surgery. Forty eight patients (8.6 %) had a history of trauma. The mean age of patients was 66.5 10.4 ± years with a range of 41 to 91 years. From 437 patients who their BMI was recorded 4.8 % had a BMI of under 18, 49.7 % had a BMI of between 18 and 25 and 45.5 % had a BMI of over 25.

Table 1: Demographic findings of patients entering the study.

Variable	Variable	Percentage	Number	Number of Patients with Missing Information
Sex	Male	48.6	266	31
	Female	51.6	258	
Place of Residence	Urban Residence	61.2	336	6
	Suburb Residence	38.8	213	
Original Place of Birth	Originally from Yazd Province	67.2	373	0
	Not Originally from Yazd Province	32.8	182	0
Sunlight Exposure	Direct Sunlight Exposure in Workplace	38.4	213	0
Smoking	No Direct Sunlight Exposure in Workplace	61.6	342	0
	History of Smoking in Last One Year	7.4	41	0

Table 2: Common systemic diseases and drug usage among patients with cataract.

Name of Systemic Disease	Percentage	Drug with Highest Usage	Percentage	Number
High Blood Pressure	28.6	Angiotensin II Receptor Blockers	41.1	228
Cardiovascular Disease	17.3	NSAIDs	16.9	94
Diabetes Mellitus	18.6	Insulin	27.4	152
Cholesterolemia	70.5	Statins	25.9	144
Rheumatism	8.8	Immunosuppressants	5.9	33
Kidney Disease	12	Loop Diuretics	4.5	25

Discussion

The aim of the present study was to review the demographic data and history of systemic diseases in patients undergoing cataract surgery in Shahid Sadoughi hospital, Yazd, Iran, between January and September 2016.

Park et al. have reported a relation between the cataract status and low educational and income levels [(1)]. Prokofyeva et al. also found that low income status has a positive relation with the prevalence of cataract. In the present study 92.3 % of participants had less than high school diploma, 6.8 % had high school diploma and only 0 - 9 percent had university education which shows an education level lower than the average in Yazd province indicating a possible relationship with low education and the prevalence of cataract. Also 45.8 % of our patients had income of less than 6,000,000 Rials per month; witch is higher than the reported percentage for this income bracket in Yazd province indicating that low income status might have a positive relation with the prevalence of cataract.

Prokofyeva et al. also suggested that smoking in past and present as well as a history of heart

disease affect the prevalence of cataract [2]. In our study only 7.8 % of patients were smoker, which was not more than the average rate. Lu et al. found that smoking is only effective on the prevalence of cataract if the patient smokes more than 30 cigarettes per day [4].

Some previous studies have indicated a relationship between high BMI and the prevalence of cataract [5,6]. In our study 45.5 % of patients had a BMI of over 25 which was in line with those studies.

Our study lacked a control group so we failed to analyze the risk factors for cataract with more accuracy. Future case control trials, with higher number of participants, are recommended.

Conclusion

Our study suggests a relationship between the income and education level as well as BMI and the prevalence of cataract among patients in Yazd province, Iran. Future case control trials, with higher number of participants, are recommended.

Acknowledgement

We want to thank Mehrangiz Rahmani and Robabe Dehghan for their help in data gathering for the present study.

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Footnotes and Financial Disclosures

Conflict of Interest:

The authors declare no conflict of interest with the subject matter of the present manuscript.