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Research Article

**AN OBSERVATIONAL STUDY ON THE RISKS FACTORS
LINKED WITH THE DISEASE OF PRE-SANILE CATARACT**¹Allah Nawaz, ²Dr. Shamsuddin Mir Muhammad Jan, ³Dr Rezaullah¹RHC Fort Marot Bahawalnagar, ²ACD Teru, Ghizer Gilgit Baltistan, ³Medical Officer Kunar
Provincial Hospital, Afghanistan.**Article Received:** February 2019**Accepted:** March 2019**Published:** April 2019**Abstract:**

Objective: The objective of this work is to find out the different factors of risk linked with the disease of PSC (Pre-senile Cataract) in the patients selected for the surgery of cataract.

Methodology: This study was conducted at Mayo hospital Lahore from November 2016 to October 2018. Patients suffering from cataract have the age of 30 to 55 years were the part of this research work. The availability of the factors of risk as DM (Diabetes Mellitus), great myopia, professional contact to the metal work, atopic dermatitis & cigarette smoking were under consideration and recorded. Visual perception, examination of the anterior & posterior segments carried out after that measurement of the axial length performed.

Result: Total 254 patients who were fulfilling the standard of the study included in this research work. One hundred and eighty one were men with an average age of 44.70 years & 73 were females with an average age of 43.80 years). The involvement of the unilateral eye was available in 108 cataract patients whereas the involvement of bilateral was available in 146 cataract patients. The frequency of the risk factors was diabetes mellitus as 26.0%, high myopia as 16.10%, cigarette smoking as 15.0%, exposure to metal work as 3.10%, atopic dermatitis as 2.0% while 37.80% patients found as idiopathic. The significant was available in the rates of the risk factors & the average age in accordance with the availability of risk factors. There was no important relationship available among age of the patient with the risk factors and sex of the patient.

Conclusion: This research work displays that idiopathy was contributing in a large amount of the patients suffering from PSC followed by DM, great myopia & cigarette smoking.

Key Words: Pre-senile, cataract, DM, PSC, myopia, methodology, unilateral, bilateral, exposure, measurement.

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INTRODUCTION:

The one of the main causes of blindness is cataract in the whole world especially in Asia. The standard of the operation of cataract is mostly patient centered rather than medical and patients finds it hard to perform their normal routine activities after the early surgery of cataract [1]. PSC is the onset of disease that normally happens from initial adulthood to the sixty year of age [2]. The factors of the risks for PSC consists the past history of the family, some kind of refractive error as myopia and diseases of metabolism as DM, which causing the gathering of the crosslinks derived by glycation resulting a great weight of material which is responsible for the opacification of the lens [3-6]. Some of the other reasons of the PSC are atopic dermatitis, the use of the corticosteroids for a long period of time which has a relation to the dose, total period of treatment and administration mode [7].

Cigarette smoking, the use of alcohol, serious malnutrition, ultraviolet radiation (290 nanometer to 320 nanometer), and diarrhea of serious nature resulting in the problem of dehydration are some of the other risk factor for the formation of the cataract. In the adult patients, ionizing radiations as the wavelength of X-ray (from 0.001 to 10 nanometer) can result in the development of the cataract [8-10]. Other reasons of this disease are trauma, inflammation of intra ocular, injury, outdoor profession and professional contact with the metals [7, 11, 12]. The current case study carried out to assess the different factors of risk that has an association with the PSC and up till now, we found no case study of such nature in our country Pakistan. This will help in the better management and prevention of this disease in future.

METHODOLOGY:

This research performed in Mayo Hospital Lahore in the ophthalmology department from November 2016 to October 2018. The patients with cataract with either

sex from 30 to 55 year of age were the part of this research work. The patients with the history of some other serious eye diseases were not the part of this research work. The evaluation of other factors of risk as DM, high myopia, professional contact to the metals, skin diseases and cigarette smoking carried out. The visual acuity test with the utilization of the Snellen's chart performed and examination of the anterior segment carried out with the help of slit lamp, the measurement of the pressure of intra-ocular performed with the help of Goldmann applanation tonometer. The determination of the axial length performed with the help of PAC Scan 300 A-Snonomed.

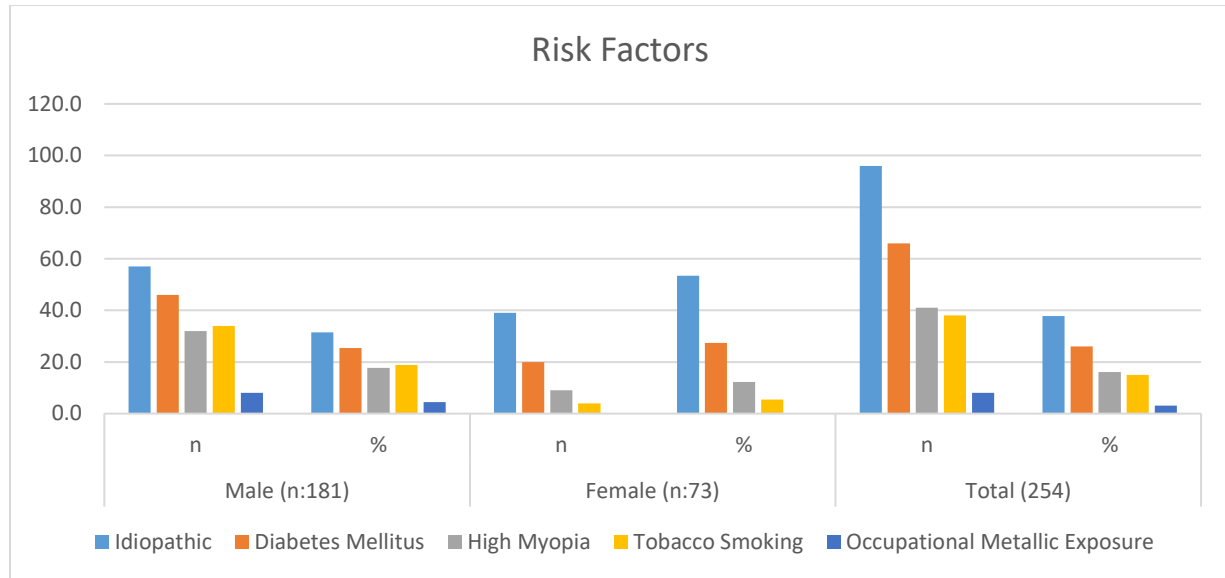
The tests for the blood sugar carried out for all the patients. The classification of the patients carried out according to the levels of the fasting and random glucose. T test was in use for the comparison of the age in both gender. Chi square test was in use for the comparison of the rate of the risk factors with sex and involvement of the eye. ANOVA utilized for the comparison of the risk factors. The significant P value was less than 0.05. PASW V.18 was in use for the analysis of the collected information.

RESULTS:

The case work consisted four hundred eyes of total 254 patients filled the standard of inclusion for study. Total 181 patients were men with an average age of 44.70 ± 5.80 years & 73 were women with an average age of 43.80 ± 5.10 years. There was no significant disparity among the age of the patients of both genders. Unilateral cataract was present in 79 men & 29 women and bilateral cataract was present in 102 men & 44 women. The major risk factor was idiopathic with rate in men as 31.50% & in women 53.40%. DM followed this a rate of 25.40% & 27.40% respectfully. The rate of the frequencies of the risk factor in accordance with the gender are present in Table-1.

Table-I: Occurrences & Comparison of Risk Factors

Risk Factors	Male (n:181)		Female (n:73)		Total (254)	
	n	%	n	%	n	%
Idiopathic	57.0	31.50	39.0	53.40	96.0	37.80
Diabetes Mellitus	46.0	25.40	20.0	27.40	66.0	26.00
High Myopia	32.0	17.70	9.0	12.30	41.0	16.10
Tobacco Smoking	34.0	18.80	4.0	5.50	38.0	15.00
Occupational Metallic Exposure	8.0	4.40	0.0	0.00	8.0	3.10

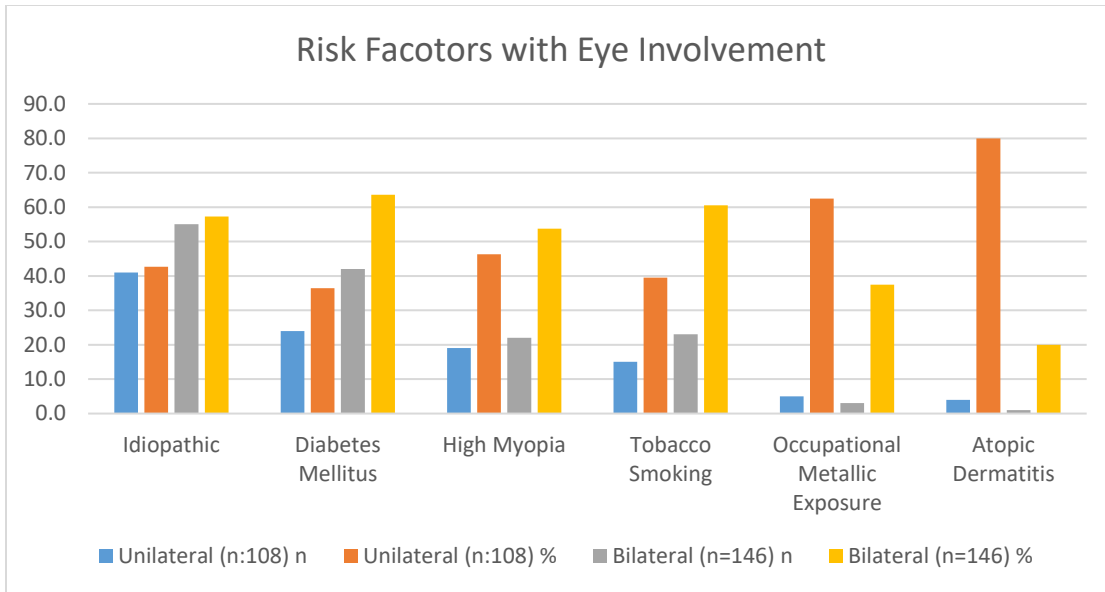


Statistically important disparities were available with the rates of the factors in accordance with gender (Table-1). The comparison of the frequency of the risk factors in accordance with the involvement of the

unilateral or bilateral displayed a high rate of the risk factors in the involvement of the bilateral but it was not important statistically (Table-2).

Table-II: Occurrence & comparison of risk factors according to Eye Involvement.

Factors	Unilateral (n:108)		Bilateral (n=146)	
	n	%	n	%
Idiopathic	41.0	42.70	55.0	57.30
Diabetes Mellitus	24.0	36.40	42.0	63.60
High Myopia	19.0	46.30	22.0	53.70
Tobacco Smoking	15.0	39.50	23.0	60.50
Occupational Metallic Exposure	5.0	62.50	3.0	37.50
Atopic Dermatitis	4.0	80.00	1.0	20.00

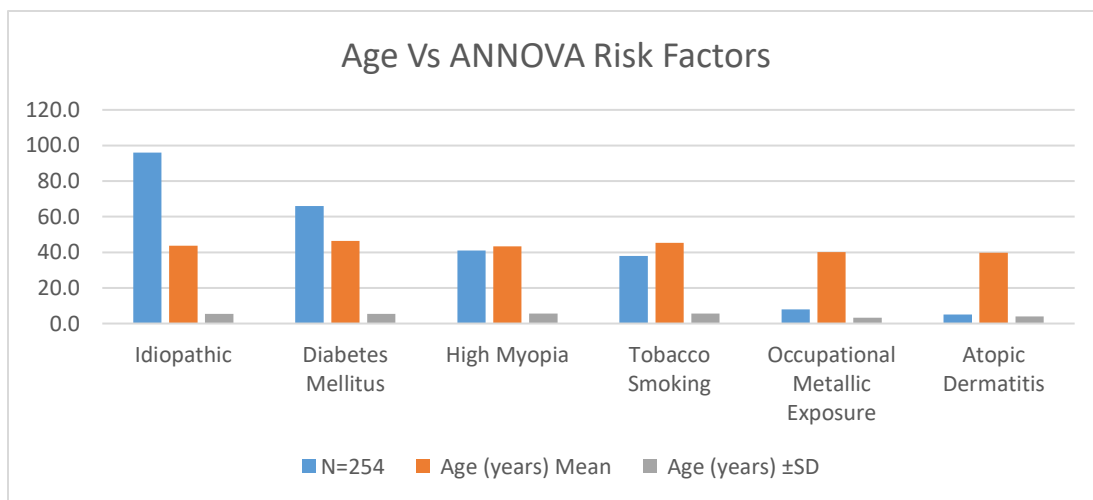


The comparison of the age of the patients in accordance with the risk factors carried out with the help of ANOVA Test. The disparities in the age of

patients in accordance with the availability of the risk factor were significant statistically. Details are available in Table-3.

Table-III: Comparison of Age according to the Presence of Risk Factors by ANNOVA.

Factors	N=254	Age (years)	
		Mean	±SD
Idiopathic	96.0	43.70	5.484
Diabetes Mellitus	66.0	46.40	5.346
High Myopia	41.0	43.40	5.682
Tobacco Smoking	38.0	45.40	5.568
Occupational Metallic Exposure	8.0	40.10	3.314
Atopic Dermatitis	5.0	39.80	3.962



DISCUSSION:

In current case study, the analysis of the rate of different risk factors of PSC carried out. Idiopathic sustained its position as the main risk factor of the PSC followed by DM & myopia. Diabetes & idiopathic were more frequent in women but the rest of the other risk factors were more common in the men. Different reasons of this disease were error of refraction, DM, atopic dermatitis, professional contact with the metals and cigarette smoking for a long period of time. Tsai concluded the average age of the patients of PSC as 45.50 ± 7.60 years which is very close to PSC patients of this study [3]. Chien SN concluded the dominance of the males in the disease of PSC [13]. Kaluzny in his study concluded that males got infection of this disease at a young age as compared to the females but the current case work did not show any dominance of the gender. The age of the patient, sex, smoking habit and contact with the ultraviolet light are the danger factors for PSC [14].

DM and its anomalies make a vital issue of health in the countries which are under development [15, 16]. The most common reason of the impairment of vision in the patients of DM is cataract because of the gathering of sorbitol inside the lens, this alters the hydration of lens and changes its process of metabolism [16]. In the patients of this study, 26.0% found with diabetes had the high age as compare to the other factors. The availability of the cataract in collaboration with diabetic retinopathy found in 20.0% patients & important association among them is also in record [17-19]. In current work, 16.10% patients appear with PSC found with error of refraction or high myopia with average age of 43.40 ± 5.682 years with a small dominance of the males. There are some reports about the association of the cataract particularly in men of more than 50 year of age [20-22]. On report concluded its presence in the patients with less than 45 year of age [13]. Previous research work have reported that the cigarette smoking is dangerous for eyes [8]. Professional contact to metals was available in 3.0% patients of this case work which is in agreement with some other case studies [23]. Idiopathy was the most common factor in majority of PSC patients as 37.80% which can be the result of exposure to ultraviolet light.

CONCLUSION:

The result of this research work showed that out of many important dangerous factors of PSC, idiopathy donated to the majority of patients trailed by DM (Diabetes Mellitus), great myopia & the habit of cigarette smoking.

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