

PREVALENCE OF DIABETES AND HYPERTENSION IN ELDERLY CATARACT PATIENTS

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ABSTRACT

Objective: This study aims to find out the prevalence of Diabetes, Hypertension, and heart disease in patients with senile Cataracts and to stratify these findings gender-wise.

Study Design: A Retrospective cross-sectional study

Duration and place of study: Department of Ophthalmology Unit B, Khyber Teaching Hospital, Peshawar. Records of those patients who were admitted to the ward between January and June 2016

Materials and Methods: This research, conducted in the ophthalmology department of Khyber Teaching Hospital, was retrospective and cross-sectional. The research comprised the medical records of individuals with senile cataracts who were hospitalized for surgery and who were older than 40. Included were both known and recently discovered instances of diabetes. Patients who had lost their eyesight due to conditions other than cataracts were excluded. SPSS was used to examine the data.

Results: Of the 190 patients in total, 23.16% had diabetes, 37.37% had high blood pressure, and 9.47% had heart disease. Most individuals (24.21%) had cataracts for at least five years, followed by those (21.57%) who had only had cataracts for a year.

Conclusion: In people who have cataract surgery, hypertension and cataracts are often prevalent conditions. To stop the spread of these illnesses, preventative measures must be used.

Key Words: Senile Cataract; Hypertension; Diabetes; Prevalence.

INTRODUCTION

Cataract has now become the leading cause of blindness in low and middle-income countries in the world. It is responsible for 51% of the world's blindness, which is about 20 million people worldwide, according to 2014 statistics.¹ It presents a significant risk to public health. In Pakistan, there were around 1,140,000 adult blind people as of 2003². Of the figures above, 570,000 adult individuals are blind from cataracts³.

Diabetes Mellitus and hypertension are tipping points of illness. Over 1.13 billion individuals globally suffer from elevated blood pressure (BP). It is among the main causes of illness and death worldwide. Every 10 mm Hg increase in blood pressure causes the risk of cardiovascular disease to double⁴. A blood pressure reading of 140/90 mmHg is considered high since it is the cutoff threshold for hypertension⁵. According to the National Health Survey of Pakistan (1990–1994), 18% of people in rural regions have hypertension⁶. According to recent polls, half of the adult population in our nation over 50 has hypertension⁷. research by Khan S. et al. found that 26.7% of KPK residents had hypertension (BP≥140/90)⁶. Fasting plasma glucose levels of 7.0 mmol/l (126 mg/dl) or 2-hour plasma glucose levels of 11.1 mmol/l (200 mg/dl) are required to diagnose diabetes. Additionally, it is advised that an HbA1c of 6.5% be used as the cutoff criterion for diagnosing diabetes⁹. Globally, diabetes affects

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Date Received: Jan-05-2021

Date Accepted: Feb-07-2021

Date Revised: Mar-24-2021

Available Online: April-03-2021

around 422 million people, according to a WHO study conducted in 2014. Diabetes was expected to be the direct cause of 1.6 million fatalities in 2015¹⁰. A 2015 study indicates that 7.9% of KPK residents had diabetes mellitus (DM)⁶. In Pakistan, people with diabetes undergo around 20% of cataract operations¹¹. In India, the figures are comparable¹².

The Korea National Health and Nutrition Examination study from 2008 to 2010 found that hypertension and diabetes are separate risk factors for cataracts of any kind, especially senile cataracts. Older age, less education, a lower monthly family income, and hypercholesterolemia are additional risk factors. Thirteen A few other risk factors include myopia, feminine sex, and aging¹⁴. An additional risk factor for cataract development is elevated blood glucose levels, as shown by many case-control and cohort studies. Hence, based on the lens glycation process, diabetes and cataracts may be related¹⁵. Therefore, identifying these comorbidities in diabetes patients early on may help avoid consequences¹².

The objective of this study is to find out the prevalence of hypertension, diabetes, and heart disease in senile cataract patients. Another aim is to find out the gender-wise prevalence of hypertension, diabetes, and heart disease in the same patients.

MATERIALS AND METHODS

This cross-sectional retrospective research was conducted at the Khyber Teaching Hospital in Peshawar, Unit B of the Department of Ophthalmology. We looked through previous data to find information on patients admitted to the ward between January and June 2016. Every patient gave their informed permission. During this time, 190 patient records with senile cataracts who were hospitalized for surgery were discovered. Participants in the research who were older than 40 were included. Both newly diagnosed diabetic patients and known diabetics were classified as people with diabetes, regardless of their blood sugar level at the time of diagnosis. The fundoscopic diagnosis of the condition or the combination of fasting, random blood sugar testing, and a glucose tolerance test were used to make the new diagnosis. This research did not include cases of vitreous diseases, glaucoma, retinal disorders, corneal disorders, or lens abnormalities other than cataracts that cause visual impairment. The Khyber Teaching Hospital's Ethical Review Board granted ethical clearance before the study's commence-

ment. The gathered data was input into an MS Excel spreadsheet, and SPSS (version 20.0) was used for analysis.

RESULTS

Of the 190 patients, 146 (76.84%) do not have diabetes, and 44 (23.16%) do. Table 1 shows that of the 44 patients, 17 (38.63%) are male and 27 (61.36%) are female. 119 (62.63%) of the 190 patients do not have hypertension, whereas 71 (37.37%) do. Thirty-one (43.66%) and forty (56.33%) of the seventy-one patients are men, 172 (90.52%) do not have heart disease, and 18 (9.47%) have. Of the total of 18, 12 (66.67%) were men and 6 (33.33%) were women (Table 2).

Table 1: Overall disease statistics

	Diabetes	Hypertension	Heart disease
Overall Prevalence	23.2%	37.4%	9.5%
Male Prevalence	8.9%	16.3%	6.3%
Female Prevalence	14.2%	21%	3.2%

Table 2: Patient diagnosed with cataract since (years)

Diagnosed with cataract since (years)	Frequency	Percentage
0.5	16	8.42%
1	41	21.57%
2	32	16.84%
3	27	14.21%
4	15	7.89%
5	10	5.26%
>5	46	24.21%
>10	8	4.21%

DISCUSSION

Cataract is the world's leading cause of treatable blindness¹⁶. People with diabetes develop cataracts at a younger age, and it progresses more rapidly in people with diabetes¹². It has been reported that Cataract is one of the most common complications of diabetes and about 20% of all cataract procedures are performed for people with diabetes¹⁷. Therefore, early detection and control of diabetes are essential to warding off this threat for as long as feasible. Furthermore, for a favorable visual prognosis, even if a Cataract does occur, effective diabetes treatment and care are required¹⁷. Senile cataracts arise from

the aging process of the lens; global research efforts are focused on determining the variables that hasten this aging process. The two conditions in question are hypertension and diabetes. The incidence and progression of cataracts may be slowed down if appropriately handled¹⁸.

The current research found that the total prevalence of diabetes was 23.16%; however, the prevalence was lower in men (8.9%) than in women (14.2%). Investigating the reason and contributing variables for this much greater frequency in girls than in men is necessary.

Compared to men, women are more likely to acquire cortical and nuclear cataracts. Numerous research on the decreased incidence of cataracts in women who take estrogen after menopause provided evidence for this¹⁴.

The Sankara Nethralaya Diabetic Retinopathy Epidemiology and Molecular Genetics Study found that the prevalence of cataract was 44.8% in men and 51.4% in women. Additionally, the prevalence of cataracts was higher in those with diabetes for a longer period¹⁹. Diabetes and hypertension were found to be prevalent in rural India, according to another research²⁰, with rates of 20.59% and 5.9%, respectively.

The prevalence of hypertension was 37.37% overall, 16.3% in men, and 21% in women, which was comparable to the incidence of diabetes. Once again, women have a comparatively greater incidence of hypertension than men. 9.47% of people had heart disease, with 3.2% of women and 6.3% of men affected. When it comes to heart disease, the gender pattern is inverted. According to Korean research, metabolic syndrome does not correlate with cataract development in males, but it does correlate with it in women. The two genders' distinct hormonal profiles and lifestyles may have contributed to this discrepancy¹⁵.

According to research done in Andhra Pradesh, India, 4.7% of male cataract patients had diabetes, and 13.8% of them had hypertension. Conversely, 4.4% of females had diabetes and 24.5% had hypertension. This pattern varies somewhat from the current research in that there is a greater prevalence of diabetes in females in this study²⁰ than in men. In this study, the maximum number of 46 (24.21%) people had Cataracts for the past 5 years at the time of

admission. 21.57% had it for the past 1 year, followed by 16.84% for the past 2 years.

CONCLUSION

In Peshawar, the frequency of diabetes and hypertension is high among cataract patients. Men were more likely than women to have hypertension, while women were more likely to have diabetes. Further research is required to identify the causes and risk factors of this in Peshawar. To stop the spread of these illnesses, the community must adopt preventive measures, including nutrition, exercise, and lifestyle changes.

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