

# Complication of Diabetes in Patients Attending Nishtar Hospital Multan

Muhammad Waqas Khan<sup>1</sup>, Kanwal Javaid<sup>2</sup> and Shazia Anjum<sup>2</sup>

## ABSTRACT

**Objectives:** The objective of our study is find out the prevalence of diabetic complications among the diabetic patients

**Study Design:** Cross sectional study

**Place and Duration of Study:** This study was conducted at the Department of Medicine, Nishtar Hospital, Multan from June 2016 to November 2016.

**Materials and Methods:** The study population came from diverse socio-demographic backgrounds. Most of them were from different districts of Punjab. 200 patients were selected by Systematic random sampling. SPSS 21 was used for data entry and analysis.

**Results:** A total of 200 patients participated in study with main age of respondents being 48.5 SD. About which 52.1 male and 48% female. Visual impairment is most common complication of diabetes .According to research 75% of patients had visual impairment, out of which 74.1% had decreased vision and 26.4% had cloudy vision. Most patients went for regular check up to ophthalmologist. Diabetes is related to CVS complications as 60% diabetic patients were hypertensive.

As the table 4 shows, diabetes has adverse effects on the renal system and this complication of diabetes is the second leading cause of death if diabetes is left uncontrolled. Most of the patients had frequency and urgency of micturition. 46% patients had complained of change in color of urine, about 83.6% of them had pale yellow color. Regular check up of kidney is very necessary for the prevention of getting nephropathy. But mostly patients were unaware of this worst complication and only 26.5% went for regular check up to nephrologists.

**Conclusion:** This study demonstrated a satisfactory elementary knowledge regarding complications of diabetes in diabetic patients. But there is lack of understanding regarding complications of diabetes among patients .Our findings suggest sustained efforts and more emphasis on this particular topic so that patient become more aware about diabetes complications and go for there regular check up in order to prevent the complications..

**Key Words:** Diabetes, incidence, complication.

**Citation of article:** Khan MW, Javaid K, Anjum S. Complication of Diabetes in Patients Attending Nishtar Hospital Multan. Med Forum 2017;28(4):166-169.

## INTRODUCTION

Diabetes mellitus is a lifelong disease characterized by high blood sugar level than normal which is 70-120 mg/dl .If the blood sugar level not properly controlled it can cause many complications like nephropathy, retinopathy, neuropathy, feet ulcers and gangrene etc. These complications are the leading cause of morbidity and mortality in all over the world.<sup>1</sup>

Complications are mainly related to duration and uncontrolled diabetes. The most common complication is diabetic retinopathy. It is the leading cause of blindness particularly in the affluent society.

It is common after the disease has lasted approximately 10 years. It usually occurs in patients after the age of 20

years .second most common complication is nephropathy which effects the kidneys and cause renal failure of the diabetic patients, it is the 2<sup>nd</sup> leading cause of death among the patients.<sup>1</sup>st cause of death among the diabetic patients is the myocardial infarction which is one of CVS complications of the diabetes.<sup>2</sup>

According to prevalence of diabetes and its complications Pakistan is at 7<sup>th</sup> number in the world. Total population of Pakistan is 140 million out of which the prevalence of diabetes is 11.4% in 25 year of age and the prevalence of complications is 9.3%.Global burden of diabetes and its complication are increasing day by day, prevalence of diabetes in adults worldwide is estimated to be 4% in 1995 and rise to 5.4% in 2025.<sup>3</sup> Complications of diabetes are mainly related to duration, if the duration is more than 7 Years then there are more chances of developing diabetic complications. Diabetic complications are also associated with uncontrolled diabetes, those patients who are not taking regularly hypoglycemic drugs and not at the regular follow up are more prone to diabetic complications. It is also related to hypertension, obesity and BMI. Because

<sup>1</sup>. Department of Medicine / Obstet & Gynae, NMC, Multan.

Correspondence: Dr. Muhammad Waqas Khan, Medical Officer, Town Hospital Rahimabad Multan.

Contact No: 0321 5942222

Email: polokhannn@yahoo.com

Received: February 25, 2017; Accepted: March 22, 2017

in case of obesity insulin receptors are decreased due to increased intracellular fat concentration. Insulin is one of the Metabolic defect which cause type 2 diabetes other defect is beta cell dysfunction. Insulin resistance occur due to genetic predisposition and obesity, it is often detected 10 to 20 years before the onset of diabetes in predisposing individuals.<sup>4</sup>

The rationale of our study is to elucidate the knowledge, attitude and practices of people regarding diabetes and its complications. The aim of our study is to educate people about diabetic complications and to make them aware about the hazards of uncontrolled diabetes mellitus and to educate them how they can manage or control their diabetes and prevent the complications. We also want to make them educate that if the complication occurred then how they can be managed.

## MATERIALS AND METHODS

This Cross-sectional study carried out in Diabetic patients attending Nishtar Hospital, Multan. outdoor from June 2016 to November 2016. The study population came from diverse socio-demographic backgrounds. Most of them were from different districts of Punjab. 200 patients were selected by Systematic random sampling.

Self administered structured questionnaires were given to the students. The information sought included the socio-demographic characteristics of the study participants and questions regarding the history, control, medication, regular follow up and the complications of diabetes.

### Data analysis:

SPSS 21 was used for data entry and analysis. Descriptive statistics and frequency distribution were computed. Chi-square test and Student's t-test were used to determine statistical significance. All tests were performed using alpha=0.05.

## RESULTS

A total of 200 patients participated in study with main age of respondents being 48.5 SD. About which 52.1 were male and 48% female. Mostly the patients belong to lower middle class, illiterate, and unemployed. (Table 1)

Most patients attending Nishtar Hospital, Multan had the history of diabetes less than 5 years and 5-10 years. About 84% of them go for regular check up and 80% takes oral hypoglycemic drugs. About 85% of these diabetic patients avoided sweets for control of diabetes and 34% patients responded positively that they do regular exercise (Table 2)

Visual impairment is most common complication of diabetes. According to research 75% of patients had visual impairment, out of which 74.1% had decreased vision and 26.4% had cloudy vision. Most patients went for regular check up to ophthalmologist. Diabetes is

related to CVS complications as 60% diabetic patients were hypertensive. (Table 3).

As the table 4 shows, diabetes has adverse effects on the renal system and this complication of diabetes is the second leading cause of death if diabetes is left uncontrolled. Most of the patients had frequency and urgency of micturition. 46% patients had complained of change in color of urine, about 83.6% of them had pale yellow color.

**Table No.1: Demographic characteristics of diabetic patients attending NHM. (N=200)**

| Characteristic      | Number | Percentage |
|---------------------|--------|------------|
| Age                 |        |            |
| 12-48yrs            | 68     | 34.0       |
| 48-85yrs            | 132    | 66.5       |
| Gender              |        |            |
| Male                | 104    | 52         |
| Female              | 96     | 48         |
| Occupation          |        |            |
| Government servants | 6      | 3.0        |
| Employed            | 78     | 39         |
| Unemployed          | 116    | 58         |
| Educational status  |        |            |
| Illiterate          | 81     | 40.5       |
| Under matric        | 87     | 43.5       |
| Graduation and more | 32     | 16         |

**Table No.2: History of diabetes of diabetic patients attending NHM**

| Characteristic                      | Number | Percentage |
|-------------------------------------|--------|------------|
| Duration of diabetes                |        |            |
| Less than 5yrs                      | 95     | 47.5       |
| 5-10yrs                             | 64     | 32         |
| More than 10yrs                     | 35     | 17.5       |
| Regular follow-up                   |        |            |
| Yes                                 | 161    | 80.5       |
| No                                  | 39     | 19.5       |
| BSL checked after regular intervals |        |            |
| Yes                                 | 168    | 84         |
| No                                  | 32     | 16         |
| If 'yes' then at                    |        |            |
| Home                                | 33     | 19.6       |
| Clinic                              | 135    | 80.3       |
| Controlled diabetes                 |        |            |
| Yes                                 | 107    | 53.5       |
| No                                  | 93     | 46.5       |
| Medicine taken to control diabetes  |        |            |
| Yes                                 | 185    | 92.5       |
| No                                  | 15     | 7.5        |
| Medicine taken regularly            |        |            |
| Yes                                 | 160    | 80         |
| No                                  | 40     | 20         |

Regular check up of kidney is very necessary for the prevention of getting nephropathy. But mostly patients were unaware of this worst complication and only

26.5% went for regular check up to nephrologists. (Table 4)

Table 5 shows that diabetes has effect on the nervous system and 76.5% had the complain of numbness of hand and feet. 91% showed the muscle weakness ,patients with long history of diabetes had complain of developing gangrene and foot ulcer.

**Table No.3: Ophthalmological and CVS complications in diabetic patients attending NHM.**

| Characteristic              | Number | Percentage |
|-----------------------------|--------|------------|
| Visual impairment seen      |        |            |
| Yes                         | 151    | 75.5       |
| No                          | 49     | 24.5       |
| if 'yes 'then               |        |            |
| Decreased vision            | 112    | 74.1       |
| Cloudy vision               | 40     | 26.4       |
| Visited ophthalmologist     |        |            |
| Yes                         | 104    | 52         |
| No                          | 96     | 48         |
| High blood pressure present |        |            |
| Yes                         | 120    | 60         |
| No                          | 80     | 40         |

**Table No.4: Nephrological complications in diabetic patients attending NHM.**

| Characteristic                           | Number | Percentage |
|------------------------------------------|--------|------------|
| Kidney problem present                   |        |            |
| Yes                                      | 48     | 24         |
| No                                       | 152    | 76         |
| Increased frequency of urination         |        |            |
| Yes                                      | 119    | 59.5       |
| No                                       | 81     | 40.5       |
| Complaint of urgency present             |        |            |
| Yes                                      | 111    | 55.5       |
| No                                       | 89     | 44.5       |
| Complaint of burning micturition present |        |            |
| Yes                                      | 68     | 34         |
| No                                       | 132    | 66         |
| Change in urine color present            |        |            |
| Yes                                      | 92     | 46         |
| No                                       | 108    | 54         |
| Regular check-ups by nephrologist        |        |            |
| Yes                                      | 53     | 26.5       |
| No                                       | 147    | 73.5       |
| Increase in weight present               |        |            |
| Yes                                      | 31     | 15.5       |
| No                                       | 96     | 48         |

In our study history of disease in most of patients was less than 5 year because of the short duration of the diabetes most of patients developed eye complications

out of which they had decreased vision and the patient did not had regular checkup by ophthalmologist.<sup>8,9</sup>

**Table No.5: CNS complications in diabetic patients attending NHM.**

| Characteristic                                  | Number | Percentage |
|-------------------------------------------------|--------|------------|
| Muscle weakness present                         |        |            |
| Yes                                             | 183    | 91.5       |
| No                                              | 17     | 8.5        |
| Complaint of numbness of hands and feet present |        |            |
| Yes                                             | 153    | 76.5       |
| No                                              | 47     | 23.5       |
| Color of digits changed                         |        |            |
| Yes                                             | 43     | 21.5       |
| No                                              | 157    | 78.5       |
| Dryness of digits present                       |        |            |
| Yes                                             | 60     | 30         |
| No                                              | 140    | 70         |
| Foot ulcers present                             |        |            |
| Yes                                             | 37     | 18.5       |
| No                                              | 163    | 81.5       |
| If 'yes' Visited doctor for foot ulcers         |        |            |
| Yes                                             | 29     | 78.4       |
| No                                              | 8      | 21.6       |

## DISCUSSION

In this study conducted in NHM an attempt has been made to see complications of diabetes among diabetics and its staggeringly high prevalence. In addition to improving community awareness regarding this disease, enhanced knowledge among people is elementary in addressing issue .A study conducted to know prevalence of complications.<sup>5</sup> Our study diverges in a way it involve diabetic patient from government hospital where most of patient were illiterate, unemployed and from lower socioeconomic status. This study predominanetly demonstrated poor understanding regarding diabetes ,its course and complications .So most patients are at risk of developing complications .Our study mirrored these results so it is important to take steps at a relatively early level to eliminate flaws and deficits in patients response regarding management of disease.<sup>6</sup>

The prevalence of complications of diabetes is higher in the older age groups than in younger age groups .An essentially similar higher prevalence rate in older age group has been reported in many studies. In our study majority of these patients were in 45 years above age group .Our study showed that patients who had no regular checkup of blood sugar level and did not had the regular follow up developed complications earlier.<sup>7</sup> Patients who also did not take medicine regularly developed complications early. Poverty is an important limiting factor for treatment. In this community there is a wide spread ignorance of the complications.

Research shows that diabetes has strong relationship with vascular system as majority of patients were hypertensive and it is alarming because CVS problem like myocardial infarction is the first leading cause of death among diabetics. Due to short duration of history of diabetes gangrene and other micro vascular abnormalities were not too much prevalent.<sup>10</sup>

Study showed that patients were not aware about kidney problems but symptoms of related kidney disease were present in patients is urgency and increase in frequency of micturation. Patient needs to understand serious effects of diabetes on kidney even able to cause renal failure which is second most common cause of death worldwide.<sup>12,13</sup>

The study indicate that diabetes cause muscle weakness and numbness in great majority of patients. Obesity, lack of exercise and physical activity are an important risk factor and hence causes most of the complications.

## CONCLUSION

This study demonstrated a satisfactory elementary knowledge regarding complications of diabetes in diabetic patients. But there is lack of understanding regarding complications of diabetes among patients. Our findings suggest sustained efforts and more emphasis on this particular topic so that patient become more aware about diabetes complications and go for there regular check up in order to prevent the complications.

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

## REFERENCES

1. Shera AS, Jawad F, Maqsood A, Jamal S, Azfar M, Ahmed U. Prevalence of chronic complications and associated factors in Type 2 diabetes. *J Pak Med Assoc.* 2004 Feb;54(2):54-9.
2. Jamal-u-Din, Qureshi MB, Khan AJ, Khan MD, Ahmad K. Prevalence of diabetic retinopathy among individuals screened for diabetes in five community based eye camps in northern Karachi Pakistan. *J Ayub Med Coll Abbottabad* 2006; 18(3):40-3.
3. Gulabani M, John M, Isaac R. Knowledge of diabetes, its treatment and complications among diabetic patients in tertiary care hospital. *Ind J Comm Med* 2008;33(3): 204–206.
4. Akhter F, Khan MS, Alatar AA, Faisal M, Ahmad S. Antigenic role of the adaptive immune response to d-ribose glycated LDL in diabetes, atherosclerosis and diabetes atherosclerotic patients. *Life Sci* 2016;151:139-46.
5. Malucelli DA, Malucelli FJ, Fonseca VR, et al. Hearing loss prevalence in patients with diabetes mellitus type 1. *Braz J Otorhinolaryngol* 2012; 78(3):105-15.
6. Kilpatrick ES. The rise and fall of HbA(1c) as a risk marker for diabetes complications. *Diabetologia.*2012;55(8):2089-91.
7. Hajianfar H, Bamonar A, Entezari MH, Askari G, Yazdani M. Lipid profile and serum vitafem concentration in patients with type 2 diabetes in comparison with healthy control. *Int J Prev Med* 2012;3(5):326–331.
8. Deshpande AD, Harris-Hayes M, Schootman M. Epidemiology of Diabetes and Diabetes-Related Complications. *Phys Ther* 2008;88(11):1254–1264.
9. Chen MS, Kao CS, Chang CJ, et al. Prevalence and risk factors of diabetic retinopathy among noninsulin-dependent diabetic subjects. *Am J Ophthalmol* 1992;114(6):723-30.
10. Phillip P, Wilson D, Beilby J, et al. diabetes complications and risk factors in Australian Population. *Int J Epidemiol* 1998;27(5):853-859.
11. Goepel M, Kirschner-Hermanns R, Welz-Barth A, et al. urinary incontinence among women with type 1 diabetes. *Dtsch Arztebl Int* 2010;107(30): 531–536.
12. Afifi A, Setouhy M, Sharkawy M, Ali M, Ahmed H, Menshawy O, Masoud W. Diabetic nephropathy as a cause of end-stage renal disease in Egypt: a six-year study. *East Mediterr Health J* 2004;10 (4-5):620-6.
13. Mohan N, Monickaraj F, Balasubramanyam M, Rema M, Mohan V. Imbalanced levels of angiogenic and angiostatic factors in vitreous, plasma and postmortem retinal tissue of patients with proliferative diabetic retinopathy. *J Diabetes Complications* 2012;26(5):435-41.
14. Younis BB, Arshad R, Khurshid S, Masood J, Nazir F, Tahira M. glycolytic hepatopathy develop in patients with new onset fulminant type 1 diabetes. *Pak J Med Sci* 2015;31(4):1009–1011.
15. Hunger M, Schunk M, Meisinger C, Peters A, Holle R. Estimation of the relationship between body mass index and EQ-5D health utilities in individuals with type 2 diabetes: evidence from the population-based KORA studies. *J Diabetes Complications* 2012;26(5):413-8.