wjpmr, 2019,5(4), 159-161

SJIF Impact Factor: 4.639

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

Research Article

ISSN 2455-3301

WJPMR

FREQUENCY OF DIABETIC NEPHROPATHY IN DIABETIC PATIENTS VISITING TERTIARY CARE HOSPITAL

Dr. Sumbal Amjad[1], Dr. Yusra Bukhari[2] and Dr. Mamoona Kausar*[3]

Nishtar Medical University Multan.

***Corresponding Author: Dr. Mamoona Kausar**
Nishtar Medical University Multan.
DOI: https://doi.org/10.17605/OSF.IO/8G4PX

Article Received on 20/02/2019 **Article Revised on 10/03/2019** **Article Accepted on 31/03/2019**

ABSTRACT

Background: The incidence of diabetic nephropathy have been increased rapidly in last couple of years and became an economic burden to the healthcare system. In this study we have determined the frequency of diabetic nephropathy in diabetic patients visiting a tertiary care hospital. **Material and methods:** It is a cross-sectional study done at Diabetic clinic OPD of Nishtar Hospital Multan. We enrolled 100 consecutive patients with diabetes mellitus presenting to diabetic OPD. After taking detailed history (like age, sex, socio economic status, duration of diabetes, smoking, alcohol, family history of DM and kidney disease), reviewing previous medical record, doing necessary laboratory investigations (HbA1c, FBS, RBS, lipid profile, renal parameters, liver function test, serum albumin, complete urine examination, 24 hour urine protein concentration etc.), blood pressure readings and ultrasound KUB we analyzed all the data of patient. Statistical analysis was performed by entering data in SPSS version 19. **Results:** Among these 100 diabetic patients, 46 (46%) were male diabetic patients and 54 (54%) were female patients. Mean age of our patients was 49 ± 6.23 years while mean duration of diabetes was 8.44 ± 3.62 years. 60% of patients were not taking treatment for the diabetes with compliance while only 40% had controlled diabetes due to proper compliance. Mean FBS level was 203 ± 29.66 mg/dl. Out of these 100 patients, 19 were smoker, while 70 patients had history of hypertension. We found that 26 patients have Diabetic Nephropathy. Seventeen patients were having microalbuminuria and 9 patients were having Macroalbuminurea in urine analysis in our study. **Conclusion:** We observed incidence of diabetic nephropathy was much higher than our expectations. Major risk factors for developing Diabetic Nephropathy are was old age, prolonged disease duration, poor glycemic control, poor compliance with treatment and hypertension. There was major ratio of diabetic patients who were not compliant with the treatment and were unaware of consequences. It is need of hour that awareness campaigns should be done targeted population. Proper treatment and well controlled diabetes can help to decrease long term complications in such patients.

INTRODUCTION

The dreadful fact regarding diabetes is that it is a "Silent killer". Usually when a patient is diagnosed to have diabetes, he/she is already affected with complications like diabetic nephropathy, retinopathy and neuropathy.[1] Diabetic nephropathy is defined as increased urine protein excretion or reduced GFR or both, is a serious complication that occurs in 20–40% of all diabetic patients.[2] Approximately one-third of diabetic patients showed microalbuminuria after 15 years of disease duration and less than half develop real nephropathy.[3] Diabetic nephropathy is the leading cause of end-stage renal disease and cause of DM-related morbidity and mortality. Diabetic nephropathy if goes undiagnosed and untreated will eventually result in ESRD and lifelong dialysis of patient.[4-5] So a study was done on the prevalence rate of diabetic nephropathy and its associated risk factors. Diabetic nephropathy is one of the common dreadful complications of Diabetes. End stage renal disease due to diabetic nephropathy can develop in the course of type 1 as well as type 2 diabetes mellitus and the risk of development is equal in both types.[6] Prevalence of diabetes has increased in last few years especially in Asian population.[7-9] & this rise is attributed to sedentary life style and increased prevalence of obesity. Especially on risk are developing countries like Pakistan, India and Bangladesh. A study conducted by Masood et al.[10] reported 7.9% frequency of nephropathy among diabetic patients. Zhou et al reported 7.8% frequency of nephropathy among diabetic patients.[9] Management and treatment of diabetic complications imposes a significant economic burden on the state and the individual. In addition, complications of diabetes have a considerable impact on the quality of life of the patient. It, therefore, becomes imperative to institute effective screening and preventive strategies to detect the early signs of complications.

MATERIAL AND METHODS

It is a cross-sectional study done at Diabetic clinic OPD of Nishtar Hospital Multan. We enrolled 100 consecutive patients with diabetes mellitus presenting to diabetic OPD. After taking detailed history (like age, sex, socio economic status, duration of diabetes, smoking, alcohol, family history of DM and kidney disease), reviewing previous medical record, doing necessary laboratory investigations (HbA1c, FBS, RBS, lipid profile, renal parameters, liver function test, serum albumin, complete urine examination, 24 hour urine protein concentration etc.), blood pressure readings and ultrasound KUB we analyzed all the data of patient. Statistical analysis was performed by entering data in SPSS version 19 Those patients who were already known cases of albuminuria, having primary nephrotic syndrome and glomerulonephritis.

RESULTS

Among these 100 diabetic patients, 46 (46%) were male diabetic patients and 54 (54%) were female patients. Mean age of our patients was 49 ± 6.23 years with minimum age was 43 years and maximum age was 60 yrs.). While mean duration of diabetes was 8.44 ± 3.62 years (with minimum duration of disease was 3 years and maximum duration was 12 years). 60% of patients were not taking treatment for the diabetes with compliance while only 40% had controlled diabetes due to proper compliance. Mean FBS level was 203 ± 29.66 mg/dl (with minimum level was 160 mg /dl while maximum was 270 mg/dl). Out of these 100 patients, 19 were smoker, while 70 patients had history of hypertension. Seventeen patients were having microalbuminuria and 9 patients were having Macroalbuminurea in urine analysis in our study. Mean level of urinary albumin was found to be 102.3 ± 122.44 (with minimum level was 22 while maximum level was found to be 400+). We found that 26 patients have Diabetic Nephropathy.

DISCUSSION

Diabetic nephropathy is a dangerous complication of Diabetes mellitus and early detection is of supreme importance. In a study, it has been shown that Nephropathy is present in about 14- 18% of patients with newly diagnosed type 2 Diabetes.[8] By the year 2030, it is expected that diabetes will become the 7th leading cause of death in the world.[10-13] Development of chronic kidney disease (CKD) in patients with diabetes adds significantly to the morbidity and mortality and significantly increases health care costs, even before the development of end stage renal disease.[3-4] In this current study we enrolled 100 diabetic patients meeting inclusion and exclusion criteria of our study. Out of these 100 patients, 46% were male diabetic patients and 54% were female patients. Khan et al,[17] reported 40% male patients in his study with diabetes which is close to our study results. A study conducted by Azeem et al.[8-9] reported 60% male patients with diabetes which is higher than our study findings. Mean age of our patients was 49 ± 6.23 years with minimum age was 43 years and maximum age was 60 yrs.). Mean age of the male patients was 50.1 ± 7.68 years while that of female patients was 48.51 ± 5.44 years. Our study results have indicated that majority of our study cases i.e. 53 (53%) were having their ages more than 45 years. Similar results have been reported by Azim et al.[8-9] and Muzaffar et al.[16-17] Out of these hundred patients 19% had history of smoking while 70% had history of hypertension along with diabetes. Azim et al.[18] reported 48% hypertension among targeted population which is quite low as observed in our study. Muzaffar et al.[19] reported 58% hypertension in diabetic patients. These study results are close to our study results. Nephropathy was present in 26% of our enrolled patients. A study conducted by Masood et al.[19] reported 7.9% frequency of nephropathy among diabetic patients. Zhou et al reported 7.8 % frequency of nephropathy among diabetic patients.[16] Similar results have been reported by Muzaffar et al.[19] Microalbuminurea was seen in 17 patients of our study and Macroalbuminurea was present in 9 patients. Similar results were reported by Muzaffar et al.[19] our study observed higher frequencies of diabetic nephropathy, the reason for that high incidence could be attributed to a variety of factors.

- Poor compliance with treatment protocol and poor glycemic control.
- Low public health awareness.
- The attitude of the general public to “bear through the problem” for as long as possible.
- Ayurveda, Hakeem and Quacks are falsely trying to relieve the earlier symptoms of Diabetes, thus delaying the actual diagnosis of Diabetes.
- Negligence regarding importance of screening for Diabetes/Diabetic nephropathy in high risk patients.

CONCLUSION

We observed incidence of diabetic nephropathy was much higher than our expectations. Major risk factors for developing Diabetic Nephropathy are was old age, prolonged disease duration, poor glycemic control, poor compliance with treatment and hypertension. There was major ratio of diabetic patients who were not compliant with the treatment and were unaware of consequences. Hence all diabetic patients, especially those with increased duration should be screened for diabetic nephropathy and made aware of the complications. Since nephropathy is a forerunner for end stage renal disease, preventive measures can help in preventing renal failure. It is need of hour that awareness campaigns should be done targeted population. Proper treatment and well controlled diabetes can help to decrease long term complications in such patients.

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