

# Assessment of the Awareness regarding Diabetic Neuropathy Complication among the Diabetic Patients of Nawabshah Pakistan

Arslan Ahmer<sup>1\*</sup>, Awais Bashir Larik<sup>2</sup>, Niaz Hussain Jamali<sup>3</sup>, Hamid Ali Kazi<sup>4</sup>, Gulshan Ali Memon<sup>5</sup>, Anwar Ali Jamali<sup>6</sup>

1. Lecturer, Institute of Pharmaceutical Sciences, People's University of Medical and Health Sciences, Nawabshah, Pakistan.
2. Assistant Professor, Department of Neurology, People's University of Medical and Health Sciences, Nawabshah, Pakistan.
3. Medical Technologist, Institute of Pharmaceutical Sciences, People's University of Medical and Health Sciences, Nawabshah, Pakistan.
4. professor Institute of Pharmaceutical Sciences, People's University of Medical and Health Sciences, Nawabshah, Pakistan.
5. Professor, Department of surgery, People's University of Medical and Health Sciences, Nawabshah, Pakistan.
6. Associate Professor, Department of Medicine, People's University of Medical and Health Sciences, Nawabshah, Pakistan.

**CORRESPONDENCE:** Arslan Ahmer, Lecturer, Institute of Pharmaceutical Sciences, People's University of Medical and Health Sciences, Nawabshah, Pakistan.  
**Email:** [arslan.ahmer@gmail.com](mailto:arslan.ahmer@gmail.com)  
**Cell#** 03003071870

## ABSTRACT:

**Objective:** The objective of this study is to assess the knowledge level regarding complication of diabetic neuropathy among the diabetic patients.

**Subjects and Methods:** A total 350 Diabetic patients were chosen different from different Medical Centers of Nawabshah for this study and well developed Questionnaire was distributed among them. Only those subjects were included who showed the interest and returned back the filled questionnaire.

**Duration** from Jan 2019 - Dec 2019

**Results:** Out of 300 study subjects 134 patients knew that which sort of complication had appeared in their feet, 92 patients had answered No to the question which was asked from them. Only 74 patients don't know the appearance and actual cause of complication of neuropathy

**Conclusion:** Among the study subjects mostly patients don't know the actual cause of neuropathic complication and which was the complication appeared in their feet

How to cite this article: Ahmer A<sup>1</sup>, Larik AB<sup>2</sup>, Jamali NH<sup>3</sup>, Kazi HA<sup>4</sup>, Memon GA<sup>5</sup>, Jamali AA<sup>6</sup>

Assessment of the Awareness regarding Diabetic Neuropathy Complication among the Diabetic Patients of Nawabshah Pakistan. JPUMHS:2020;10(02)28-31.

<http://doi.org/10.46536/jpumhs/2020/10.02.286>

## INTRODUCTION:

Diabetes Mellitus is the defect in the body, in which body can not convert glucose in to energy.<sup>1,2</sup> When we eat anything it is converted into sugar and Sugar is the fuel for the activities of the body. This defect occurs due to lack of hormone, that present in the pancreases and is called Insulin.<sup>3,4</sup> Diabetes is the condition of hyperglycemia which occur either by less production of insulin in the systemic circulation or insulin resistance between glucose and receptors of the Insulin and some time both condition may develop the diabetes condition.<sup>5</sup> For diagnosis of diabetes, there are so many signs which may include; polyurea, polyphagia, polydipsia, blurred vision, fatigue, weight loss, slow and frequent healing infections which may include; skin, bladder and vaginal infection, itchy and dry skin, feeling numbness, pins and loosing feeling in your feet.<sup>6,7</sup> Infection healing is very slow in the diabetic people because hyperglycemia makes hindrance in the healing process of infection.<sup>8</sup> Weight loss occurs suddenly because of Glycolysis and

gluconeogenesis processes. In the Diabetes Mellitus there could be different sort of complexities which augment the percentage of the morbidity and mortality. Among different complications of the Diabetes Mellitus the diabetic neuropathy is also one of the very dangerous complication which if left untreated can end in the amputation.<sup>9,10</sup> It is one and most serious complication of diabetes because if it is not controlled on time it may lead to very dangerous outcomes. Whenever the glucose level is increased in the nerves that may lead to the structural damage of the nerve fibers.<sup>11,12</sup> The structural damage of nerves can cause abnormal functions and due to potential propagation pain is produced. If the motor fiber is damaged then it causes muscular weakness. Whereas aching, tingling, pain and loss of function is caused due to damage of sensory fibers and all autonomic functions are disturbed due to damage of autonomic fibers.<sup>13</sup> Hence, there is dire need worldwide to spread the awareness regarding the complications of diabetes Mellitus. For type II diabetes there are many risk factors ranges from family history,

weight gain, physical inactiveness, over age, insulin resistance, insulin sensitivity, heredity variables, race and ethnicity. Heredity variation is the major element responsible for the creating diabetes. Insulin sensitivity and insulin resistance also responsible for this purpose of creating diabetes and complication of diabetes associated with diabetes. There are many ways to manage diabetes. First step to manage diabetes is non pharmacological type. This may include food control, physical activity and life style modification. From the pharmacological point of view Oral Hypoglycemic Agents and Insulin sorts are used to manage the elevated glucose level in the blood circulation. Diabetes is a chronic and long term disorder, which is influencing the majority of population in Hyderabad, Pakistan and all over the world. Studies have shown already that Diabetes can be controlled through rational therapy; Patient counseling and Proper management include Diet control and Exercise. As it is long term disease so needs therapy for long duration effectively. If it is not effectively controlled through proper measures, it can worsen and may lead to death. So for its best control, patients' adherence with rational therapy is most important. Different classes of drugs are used for its treatment so proper selection of medications depending upon severity of disease and patient's factors. Patients' adherence/compliance with therapy depends upon different reasons like patient education, proper counseling, prescriber's attention to him. Unavailability of pharmacist in health care system is must be highlighted.<sup>14-16</sup>

The objective of this study is to assess the knowledge level regarding complication of diabetic neuropathy among the diabetic patients.

## METHODOLOGY:

**Table 01: AGE OF STUDY SUBJECTS**

AGES	NUMBER OF PATIENTS	PERCENTAGE OF THE PATIENTS	NUMBER OF MALES	NUMBER OF FEMALES
25-35	54	18%	42	12
36-45	150	50%	96	54
46-55	80	26.6%	34	46
56-65	16	5.33%	06	10

**Table 02: GENDER DISTRIBUTION OF THE STUDY SUBJECTS**

Gender	Frequency	Percentage
Males	178	60%
Females	122	40%

The cross sectional study was conducted for the period of 6 months at different Medical Centers of Nawbshah. The diabetic type II patients were included in the study and especially focused on the subjects, who were affecting from diabetic neuropathic complications like as Gangrene, charcoal joint, hammer toe and foot infections. A well formulated questionnaire was distributed among the study subjects. The sample was chosen using the sample random technique. A total 350 patients were recruited for the study out of the total sample size the 300 patients returned back the filled questionnaire, improper filled questionnaires were excluded. So in the end total 300 patients were included for the study. Data were analyzed using statistical package for social sciences (SPSS) version 23.0 and Microsoft Excel.

## RESULTS:

Among 300 patients, age was between 25 to 65 years and this also describe the number of patients in different age groups, according to this 54 (18%) patients were in 25-35 years of age group, whereas 150 (50%) were from age of 36-45 years, 80 (26.6%) patients were 46-55 years and only 16 (5.3%) patients were included in the age group of 56-65 years (Table 1). The study reported that out of 300 patients 178(60%) patients were males and 122 (40%) patients were females (Table 2). Among the study subjects most of the patients don't know the actual cause of neuropathic complication and which was the complication appeared in their feet. It was also revealed that out of 300 study subjects 134 patients knew that which sort of complication had appeared in their feet, 92 patients had answered No to the question which was asked from them. Only 74 patients don't know the appearance and actual cause of complication of neuropathy (Table 3).

**Table 03: KNOWLEDGE REGRADING COMPLICATION OF NEUROPATHY**

Description	Types of Variables	Code	Frequency	Proportion
Knowledge regarding complication of Neuropathy	Gangrene Wet/Dry	Yes	134	44.66 %
	Charcoal Joint	No	92	30.66 %
	Hammer toe	Don't know	74	24.66 %
	Calluses			

## DISCUSSION:

Diabetes is a chronic metabolic disorder in which human body is unable to produce the sufficient energy less insulin activity or secretion of insulin within the human body. High glucose level in the systemic circulation can lead to the diabetes complication which can be fatal. There are two types of diabetic complication one is macro complication which is associated with cardiac disorder such as myocardial infarction, heart attack and cardiac arrest whereas second one is micro complication which may cause different diseases of eyes (retinopathy), kidneys (nephropathy) and neurons (neuropathy). Hyperglycemia always disturb the normal physiological function of the organs and this condition create different diseases within the body as renal failure, blurred or completely loss of vision and neuropathic complication includes dry and wet gangrene, foot infection, charcoal joint, hammer toe, numbness of feet and hands. There are major four classes of diabetic neuropathy includes autonomic neuropathy, peripheral neuropathy, focal neuropathy and proximal neuropathy. Peripheral neuropathy can lead to loss of sensation or pain in the feet, toes, hands, arms and legs. Autonomic neuropathy is also type of diabetic neuropathy and it affects on the autonomic nerves which are responsible for the controlling internal organs such as genitourinary, gastrointestinal and cardiovascular. Proximal neuropathy is not common type of neuropathy and the cases of this type are very rare. Due to proximal neuropathy pain is produced in thighs, hips and buttocks. Focal Neuropathy occur whenever one nerve or couple of nerves got damaged and causing muscle weakness or pain. A study was conducted by WHO on the quality life of the diabetic patients in 2016 it was concluded that only pharmacist can reduce the complication of diabetic patients and he was responsible for the good glycemic control, reduction in HbA1c level and improved the quality life.<sup>17</sup>

Hypomagnesaemia saw as fundamental discovery in current investigation in subjects experiencing DMT2 with foot ulcers as length of Diabetes increases and diabetic foot ulcer expands, the degree of serum magnesium diminishes.<sup>18</sup>

The event of hypomagnesaemia was expanded in T2DM in patents experiencing fringe neuropathy. Subjects with diabetic neuropathy had impressive diminished serum estimations of magnesium. This suggests irregular screening of serum Mg+

levels in diabetic subjects can be useful in early location and this proposes intermittent checking of Mg levels in diabetic patients might be useful in early acknowledgment and better-quality administration of diabetic neuropathy.<sup>19</sup> It has been finished up from present exploration that Hypomagnesaemia is regular in T2DM with and without HTN. In the direction of current outcomes and conversation, T2DM subjects with and without Hypertension may profit by additional supplementation of magnesium for avoidance and as a piece of treatment.<sup>20</sup> Diabetic neuropathy was usually connected with level of magnesium also.<sup>21</sup> there are many factors involved in diabetic neuropathy, assessment of each is necessary to control the complication of neuropathy accordingly.

## CONCLUSION:

At the time of research people with diabetes were unable to diagnose the actual cause of neuropathic complication which was appeared on their body such as charcoal joint, hammer toe, foot infection, wet or dry gangrene and ulceration. Among the study subjects mostly patients don't know the actual cause of neuropathic complication and which was the complication appeared in their feet.

## REFERENCES:

1. Mammen D. Knowledge of diabetes, its treatment and complications in diabetic patients. *Journal of Medical Science And Clinical Research* 2017;05(05):21838-40.
2. Tahrani AA, Altaf QA, Piya MK, Barnett AH. Peripheral and autonomic neuropathy in South Asians and White Caucasians with Type 2 diabetes mellitus: Possible explanations for epidemiological differences. *J Diabetes Res* 2017;2017: Article ID 1273789, 10.
3. Menezes AS, Bava MM, Roshan M. A study on awareness of diabetic complications among type 2 diabetes patients. *IORS. International Organization of Research and Science Journals* 2015;3(14):13-16.
4. Won JC, Kwon HS, Kim CH, Lee JH, Park TS, Ko KS, et al. Prevalence and clinical characteristics of diabetic peripheral neuropathy in hospital patients with Type 2 diabetes in Korea. *Diabet Med* 2012;29:290-6.
5. Bakkar M M, Haddad M F, Gammoh YS. Awareness of diabetic retinopathy among patients with type 2 diabetes mellitus in Jordan. *Diabetes Metab Syndr Obes.* 2017;10:435-41.

6. Obirikorang Y, Obirikorang C, Anto EO, Acheampong E, Batu EN, Stella AD, Brenya PK. Knowledge of complications of diabetes mellitus among patients visiting the diabetes clinic at Sampa Government Hospital, Ghana: A descriptive study. *BMC Public Health* 2016;16(1):637.
7. Chong MS, Hester J. Diabetic painful neuropathy: Current and future treatment options. *Drugs* 2007;67:569-85.
8. Foma M A, Saidu Y, Omoleke S A, and Jafali J. Awareness of diabetes mellitus among diabetic patients in the Gambia: a strong case for health education and promotion. *BMC public health*, 2013;13(1):1124.
9. Deepali BS, Subramanian M, Soumya G, Vikyath BR, Aarudhra P, Ankitha M, Nagashree N. Knowledge of diabetes, its complications and treatment adherence among diabetic patients. *International Journal Of Community Medicine And Public Health* 2017;4(7):2428-2434.
10. Boulton AJ, Kirsner RS, Vileikyte L. Clinical practice. Neuropathic diabetic foot ulcers. *N Engl J Med* 2004;351:48-55.
11. Gupta S, Acharya S, and Shukla S. Awareness of symptomatology, natural history and complications of Diabetes Mellitus among NonDiabetics and diabetics in rural population of Wardha district of Central India. *International Journal Of Medical Science And Clinical Inventions* 2016;3(10): 2313- 2321.
12. Leal J, Gray AM, and Clarke PM. Development of life-expectancy tables for people with type 2 diabetes. *Eur Heart J*. 2009;30(7):834-9.
13. Dinesh P, Kulkarni A, Gangadhar N. Knowledge and self-care practices regarding diabetes among patients with Type 2 diabetes in Rural Sullia, Karnataka: A community-based, cross-sectional study. *Journal of Family Medicine And Primary Care* 2016;5(4):847.
14. American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes care* 2014;37(1):81-90.
15. Qureshi MS, Iqbal M, Noman AZ. Rapidly increasing prevalence and associations of diabetes mellitus in a rural community of Pakistan. *Journal of Diabetology* 2014;3:3.
16. Ullah F, Afridi AK, Rahim F, Ashfaq M, Khan S, Shabbier G, Rahman S. Knowledge of diabetic complications in patients with diabetes mellitus. *Journal of Ayub Medical College Abbottabad* 2015;27(2):360-63
17. World Health Organization (2016). *Global Report On Diabetes*. MEO Design and Communication: France. (Retrieved from, [http://apps.who.int/iris/bitstream/10665/204871/1/9789241565257\\_en\\_g.pdf](http://apps.who.int/iris/bitstream/10665/204871/1/9789241565257_en_g.pdf)).
18. Jamali, A.A., Jamali, G.M., Jamali, N.H., et al. (2018) Assessment of Serum Magnesium Level in Type 2 Diabetes Mellitus with Diabetic Foot Ulcers (Grade I and II) at Nawabshah, Pakistan. *International Journal of Clinical Medicine*, 9, 104-119.
19. Jamali, A.A., Jamali, G.M., *Tanwani BM*, Jamali, A.A., *Tanwani Y*, Jamali, N.M., [Association of Hypomagnesemia in Type 2 Diabetic Patients with and without Peripheral Neuropathy" \*Journal of Diabetes Mellitus\*, Vol.8 No.2, 2018](#)
20. Jamali, A.A., Jamali, G.M., Jamali, A.A., Jamali, N.H., Tanwani, B.M., Sohail, M.A. Rajput, A.A. Association of Low Serum Magnesium Levels in Type 2 Diabetes Mellitus with & without Hypertension. *Open Journal of Preventive Medicine*, (2018) 8, 57-69. <https://doi.org/10.4236/ojpm.2018.83006>
21. Kumar A, Faiz M.S. Jamali, A.A. Association Of Hypomagnesemia And Foot Ulcers In Type II Diabetes Mellitus. *Medical Forum* 2011;22 (10), 55-58