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ORIGINAL ARTICLE

Knowledge Level of Diabetic Patients about Diabetic Foot Risk Factors

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ABSTRACT

Introduction: Globally, the prevalence of diabetes is increasing. Currently their global prevalence is 4.95% and estimated to be 5.4% in 2025. Diabetic foot is a horrible disability that may lead to extended periods of hospitalization and insurmountable, growing costs, as well as the dreaded ultimate consequence of an amputated leg.

Objective: To determine the knowledge level of diabetic patients about diabetic foot risk factors

Methodology: This study was descriptive cross-sectional study carried out at the Medicine department of Hayatabad medical complex Peshawar from May 2021 to November 2021. A total of 325 patients were observed to determine the knowledge level of diabetic patients about diabetic foot risk factors. SPSS version 18 was used for statistical analysis.

Results: Totally 325 patients were included in this study. Amongst 325 patients, good, average and poor knowledge was observed in 152(46.8%), 28(8.6%) and 145(44.6%) patients respectively. Based on Risk factors, diabetic foot amputation were observed in 88(27.1%) patients, diabetic neuropathy in 26(8.0%), foot deformities in 105(32.3%), peripheral vascular disease in 32(9.8%), cigarette smoking was observed in 38(11.7%) and poor glycemic control was observed in 36(11.1%) participants.

Conclusion: Our study concludes that 46.8% of the diabetic patients have good level of knowledge about diabetic foot. Their attitude was also good in their management and care. But, there is still need of to aware diabetic patients about diabetic foot and its complication.

Key words: Knowledge level, diabetic patients, Diabetic foot risk factors

INTRODUCTION

Globally, the prevalence of diabetes is increasing. Currently their global prevalence is 4.95% and estimated to be 5.4% in 2025 [1]. According to a WHO report, Pakistan ranks eighth among the top ten nations with the highest incidence of diabetes, with 4.3 million individuals suffering from the disease. Pakistan, on the other hand, is expected to rank fourth in the world by 2025, with 14.5 million individuals suffering from the disease [2].

Diabetic foot is a horrible disability that may lead to extended periods of hospitalization and insurmountable, growing costs, as well as the dreaded ultimate consequence of an amputated leg. On the already demoralized mentality, the phantom limb works its own hilarious joke. It is not surprising that the diabetic foot is one of the most dreaded diabetes complications [3]. Diabetic foot is one of the diabetic consequences that is both avoidable and treatable. Diabetes patients have a 25% lifetime risk of developing a foot ulcer [4]. Diabetics account for 60% of all lower limb amputations in the United States [5].

Due to developments in the treatment of diabetes, diabetic foot issues have grown increasingly widespread and essential. The focus should be on preventing diabetes in the first place, rather than merely treating it when it occurs [6].

In certain studies, education seems to have a short-term favourable impact on foot care knowledge and self-reported patient behavior. There is inadequate convincing evidence that restricted patient education alone is successful in producing clinically significant reductions in ulcer and amputation incidence based on the only two adequately powerful trials reporting the impact of patient education on main end goals [6].

The frequency of wound formation may be reduced if possible risk factors for ulceration are identified early. It is suggested that all diabetic patients have their feet examined at least once a year to identify the factors that predispose them to ulceration. Maintaining adequate glycemic control, wearing suitable footwear, avoiding trauma and doing periodic self-examinations are all important aspects of diabetes management [3].

Only 30.1% of diabetes patients studied in Nigeria had a strong understanding of the risk factors for diabetic foot complications. The vast majority of individuals with poor foot care practice (78.4%) have inadequate understanding about foot care [7]. In our population, no such study has been carried out therefore this study was piloted to assess the level of knowledge of diabetic patients about diabetic foot risk factors.

MATERIAL AND METHODS

This study design was cross-sectional carried out at the medicine department, Hayatabad Medical Complex, Peshawar from May 2021 to November 2021. The sample size was calculated to be 325 by using WHO sample size software taking 30.1% proportion of good knowledge

regarding diabetic foot care, confidence level was 95% and 5% margin of error [8]. The inclusion criteria for our research include all patients of both the sexes having diabetes including type 1 and type 2 irrespective of duration of diabetes mellitus whereas exclusion criteria was all those diabetic patients who have unilateral or bilateral foot amputation and all diabetic patients having age ≤ 15 years. An informed consent in written was taken from all the participants after the study approval from institutional research and ethical committee. Patients were asked questions about risk factors causing diabetic foot in a multiple-choice pattern. Multiple choice questions were translated into patients own language to make it understandable to diabetic patient. Each question was marked as one score. Analysis of data was done by using SPSS version 18. Frequency and percentages were computed for categorical variables like gender, education, previous history of diabetic foot and questions regarding knowledge assessment. Mean ± Standard Deviation were computed for numerical variables like age and diabetes duration.

RESULTS

Amongst 325 subjects in our study, males were 266(81.8%) and females were 59 (18.2%). Age wise distribution among 325 patients was analyzed as 13(4.0%) subjects in age group of 20- 30 years, 71(21.8%) in 31-40 years age group, 140(43.1%) in 41-50 years age group while 101(31.1%) subjects were observed in 51-60 years age group.

Table 1: Demographic features of the participants

Parameter	Category	Frequency (%)
Age	20- 30 Years	13(4%)
	31-40 Years	71 (21.8%)
	41-50 Years	140 (43.1%)
	51-60 Years	101 (31.1%)
Gender	Male	266 (81.8%)
	Female	59 (18.2%)
Disease duration	5-10 years	195 (60%)
	11-20 years	43 (13.2%)
	> 20 years	87 (26.8%)

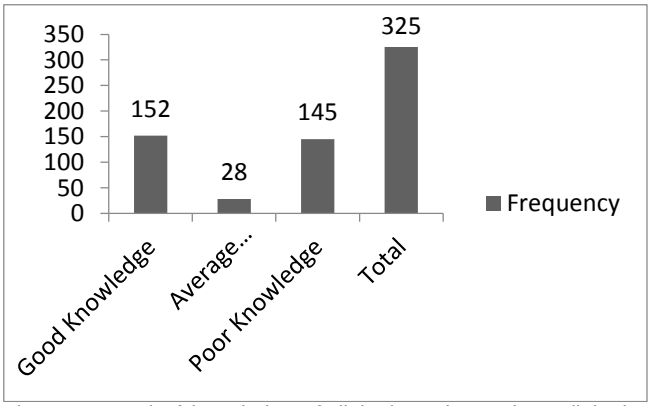

Figure 1: Level of knowledge of diabetic patients about diabetic foot

The mean age (±SD) in our subjects was 51 (±1.26) years. The duration of illness of 195(60.0%) subjects was 5-10 years, 43(13.2%) subjects was 11-20 years > while 87(26.8%) subjects were observed with illness duration of > 20 years. (Table 1) Good level of knowledge was observed in 152(46.8%) patients while poor level of knowledge was observed in 145(44.6%) patients. (Figure 1) The risk factors like Diabetic foot amputation, Diabetic neuropathy, Foot deformities, Peripheral vascular disease, Cigarette smoking and Poor glycemic control were observed in 88(27.1%), 26(8.0%), 105(32.3%), 32(9.8%), 38(11.7%) and 36(11.1%) respectively.(Figure 2)

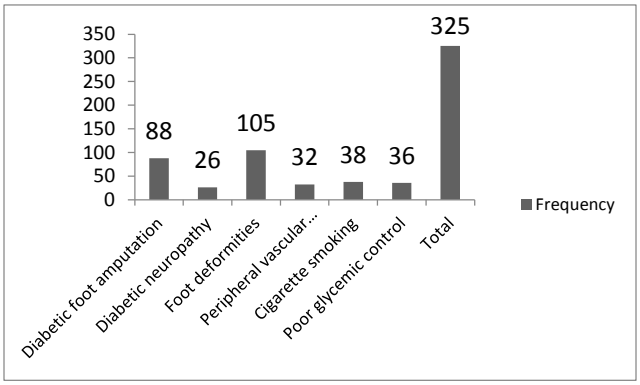

Figure 2: Diabetic foot risk factors

DISCUSSION

Diabetes patients are at a greater risk of developing diabetic foot ulcers, which may progress to amputation, infection, gangrene, and eventually death due to sepsis and failure of multi-organ [9, 10]. As a result, a proactive strategy including proper patient and physician education is essential to avoid the occurrence of diabetic foot ulcers. In our study, Good level of knowledge was observed in 152(46.8%) patients while poor level of knowledge was observed in 145(44.6%) patients. In accordance with our findings another study reported comparable results [11]. Another study done by Chiwanga FS et al. reported high level of knowledge as compared to our findings [12]. A previous study Saudi Arabia reported 55% participants with good knowledge of diabetic foot [13]. In another previous study carried out by Alhuqayl AA et al. reported 53.7% participants with good level of knowledge and 46.3% with poor knowledge about diabetic foot [14].

In our study, the risk factors like Diabetic foot amputation, Diabetic neuropathy, Foot deformities, Peripheral vascular disease, Cigarette smoking and Poor glycemic control were observed in 88(27.1%), 26(8.0%), 105(32.3%), 32(9.8%), 38(11.7%) and 36(11.1%) respectively. In accordance with our results, a previous study also reported similar results [15]. Another study reported cigarette smoking and Poor glycemic control as significant risk factors [16].

The present difficulties highlight the need of educating and counseling all diabetes patients in order to avoid diabetic foot consequences. Furthermore, it is vital to educate and urge patients to enhance their foot care practices at each clinic appointment. Diabetic foot ulcers are less common when patients are educated about their condition and given the proper tools to care for their feet, according to several studies. Education is particularly important in assisting diabetes patients' family in dealing

with the lifestyle changes that must be made, as well as providing psychological and nutritional support [17-19].

Because primary care doctors are often the initial point of contact for diabetic foot patients, they must be familiar with the risk factors, etiology, evaluation, and treatment of the disease. This research will help primary care doctors to get a better knowledge of diabetic foot patients, allowing them to better manage them. In conclusion, this research demonstrates that diabetes individuals have enough knowledge about diabetic foot. Primary care doctors, on the other hand, require further training, which may be provided via refresher courses.

CONCLUSION

Our study concludes that 46.8% of the diabetic patients have good level of knowledge about diabetic foot. Their attitude was also good in their management and care. But, there is still need of to aware diabetic patients about diabetic foot and its complication.

REFERENCES

1. Kiran Z, Sheikh A, Momin SNA, Majeed I, Awan S, Rashid O, et al. Sodium and water imbalance after sellar, suprasellar, and parasellar surgery. Endocr Pract. 2017;23(3):309-17.
2. Cuesta M, Hannon MJ, Thompson CJ. Diagnosis and treatment of hyponatraemia in neurosurgical patients. Endocrinología y Nutrición. 2016;63(5):230-8.
3. Briceño LG, Grill J, Bourdeaut F, Doz F, Beltrand J, Benabbad I, et al. Water and electrolyte disorders at long-term post-treatment follow-up in paediatric patients with suprasellar tumours include unexpected persistent cerebral salt-wasting syndrome. Horm Res Paediatr. 2014;82(6):364-71.
4. Nakajima H, Okada H, Hirose K, Murakami T, Shiotsu Y, Kadono M, et al. Cerebral salt-wasting syndrome and inappropriate antidiuretic hormone syndrome after subarachnoid hemorrhaging. Intern Med. 2017;56(6):677-80.
5. Patel KS, Chen JS, Yuan F, Attiah M, Wilson B, Wang MB, et al. Prediction of post-operative delayed hyponatremia after endoscopic transsphenoidal surgery. Clin Neurol Neurosurg. 2019;182:87-91.
6. Kleindienst A, Hannon MJ, Buchfelder M, Verbalis JG. Hyponatremia in neurotrauma: the role of vasopressin. J Neurotrauma. 2016;33(7):615-24.
7. Selim SM. Traumatic brain injury associated with hyponatremia. The Egyptian Journal of Hospital Medicine. 2019;76(7):4557-63.
8. Batra V, Gupta PK, Gehlot R, Awasthi P. Radiopathological correlation of sellar and suprasellar masses: our experience. Int J Res Med Sci. 2016;4(9):3924-8.
9. Al-Maskari F, El-Sadig M. Prevalence of risk factors for diabetic foot complications. BMC Fam Pract. 2007;8(1):1-9.
10. Hicks CW, Selvarajah S, Mathioudakis N, Sherman RL, Hines KF, Black III JH, et al. Burden of infected diabetic foot ulcers on hospital admissions and costs. Ann Vasc Surg. 2016;33:149-58.
11. Al Amri AM, Shahrani IM, Almaker YA, Alshehri DM, Argabi MA, Alghamidi FA, et al. Knowledge, Attitude and Practice Regarding Risk of Diabetic Foot Among Diabetic Patients in Aseer Region, Saudi Arabia. Cureus. 2021;13(10).
12. Chiwanga FS, Njelekela MA. Diabetic foot: prevalence, knowledge, and foot self-care practices among diabetic patients in Dar es Salaam, Tanzania–a cross-sectional study. Journal of foot and ankle research. 2015;8(1):1-7.
13. Algshanen MA, Almuhanna MF, Almuhanna AM, Alghobaish FF, Bari OS, Alajji NA, et al. Diabetic foot awareness among diabetic patients in Saudi Arabia. The Egyptian Journal of Hospital Medicine. 2017;68(2):1289-90.
14. Alhuqayl AA, Alaskar MS, Alsahli FM, Alaqil SA. Awareness of foot care among diabetic patients. IJMDC. 2019;3:154-8.
15. Al-Maskari F, El-Sadig M. Prevalence of risk factors for diabetic foot complications. BMC Fam Pract. 2007;8:59-.doi:10.1186/1471-2296-8-59.
16. Al-Rubeaan K, Al Derwish M, Ouizi S, Youssef AM, Subhani SN, Ibrahim HM, et al. Diabetic foot complications and their risk factors from a large retrospective cohort study. PLoS One. 2015;10(5):e0124446-e.doi:10.1371/journal.pone.0124446.
17. Villwock JA, Villwock M, Deshaies E, Goyal P, editors. Significant increases of pituitary tumors and resections from 1993 to 2011. International forum of allergy & rhinology; 2014: Wiley Online Library.
18. Vlotides G, Eigler T, Melmed S. Pituitary tumor-transforming gene: physiology and implications for tumorigenesis. Endocr Rev. 2007;28(2):165-86.
19. Larkin S, Ansorge O. Pathology and pathogenesis of pituitary adenomas and other sellar lesions. Endotext [Internet]. 2017.