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Risk factors of diabetic foot ulcer at a tertiary care hospital among diabetic patients

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Abstract

Introduction: Diabetes is a metabolic disorder which affects not only carbohydrate but also protein and fat metabolism. Among all these well-known complications, diabetic foot ulcer is the most common. It affects as many as 15% of patients with diabetes mellitus during their lifetime

Material and Method: The study was a hospital based cross sectional study. Present study was carried out at outpatient department of General Surgery. After their verbal informed consent after explaining them the nature of the study. Patient confidentiality was maintained. The patients diagnosed with diabetic foot ulcer were given appropriate treatment, follow up and health education. The study patients were not subjected for any kind of invasive procedure for the present study purpose.

Results: 66.0% patients were having peripheral neuropathy, 74% were having >10 years of diabetes, 50% were having peripheral arterial disease, 34% patients were having diabetic Charcot joint & 26% were having uncontrolled hyperglycemia.

Conclusion: Diabetes Mellitus is a lifelong disease and diabetic foot complications can be life threatening, physically incapacitating, costly to treat and result in extensive morbidity.

Keywords: Diabetes, foot ulcers, neuropathy.

Introduction

Diabetic foot ulcer puts enormous social impact on the patient. The patient may get isolated socially, he may lose his prior social role, stigma and discrimination are common.[1]

Like other complications of diabetes mellitus, diabetic foot ulcer is also easily preventable. Proper care by diabetic patient has shown to reduce the incidence of diabetic foot ulcer as well as consequent foot amputation by about 80% which is a great advantage for the patient as well as society. Simple measures like control of blood sugar, appropriate diet, staying away from addictions like smoking, tobacco in any form, proper foot care, regular checkup, good hemoglobin levels, controlled blood pressure levels, controlled lipid levels etc.[2,3]

To prevent the complications like diabetic foot, it is very essential that the patient should go for regular checkup and proper and adequate treatment.[4]

Hence present was undertaken to identify the risk factors and prevalence of diabetic foot ulcer in our

present settings, so that patients can be made aware and can be managed adequately.

Materials & Method

The study was a hospital based cross sectional study. Present study was carried out at outpatient department of General Surgery. After their verbal informed consent after explaining them the nature of the study. Patient confidentiality was maintained. The patients diagnosed with diabetic foot ulcer were given appropriate treatment, follow up and health education. The study patients were not subjected for any kind of invasive procedure for the present study purpose.

Sample size: 50 patients reporting to the Surgery dept. within study duration and eligible as per inclusion criteria

Inclusion Criteria: All patients of Diabetic foot who gave informed verbal consent

Exclusion Criteria:

Diabetic foot associated with venous ulcers and lymphedema.

Data thus collected were entered into excel and were then analyzed with help of EPI-Info software through tables, diagrams and appropriate statistical test wherever required.

Results

Table 1: Distribution of cases according to socio-demographic variable

Mean age ± S D	56.32± 11.36 Yrs
Male : Female	32 : 18

Maximum patients were hindu male and mean age of patients was 56.32± 11.36 Yrs.

Table 2: Distribution of cases according to risk factors responsible for ulceration:

Risk Factor	No.	(%)
Peripheral neuropathy	33	66.0
Foot Deformity	16	32.0
Diabetic Charcot Joint	17	34.0
Trauma	7	14.0
Improperly fitted shoes	6	12.0
Peripheral Arterial Disease	25	50.0
Callus	9	18.0
H/O Prior Ulceration	20	40.0
Higher Plantar Foot Pressure	10	20.0
Limited joint mobility	13	26.0
Uncontrolled hyperglycemia	13	26.0
Diabetes duration (>10 yrs)	37	74.0
Older Age	6	12.0
Poor Foot Hygiene	12	24.0

Above table shows that 66.0% patients were having peripheral neuropathy, 74% were having >10 years of diabetes, 50% were having peripheral arterial disease, 34% patients were having diabetic Charcot joint & 26% were having uncontrolled hyperglycemia.

Discussion

In the present study, mean age of patients was 56.32± 11.36 Yrs.. Wheel Lock [7] did a study which revealed that the youngest age with diabetic foot was 32 years and the oldest age was 89 years. Mayfield et al [8] did a study on sex wise distribution of diabetic foot which included 32 males and 29 females.

In our study 64.0% patients were having peripheral neuropathy, 73% were having >10 years of diabetes, 49% were having peripheral arterial disease, 34% patients were having diabetic Charcot joint & 26% were having uncontrolled hyperglycemia.

Foot ulcers among diabetics are a major cause of mortality and morbidity and also a huge financial burden on health care services as inadequate and improper treatment could result in development of gangrene leading to limb amputations and sometimes even death. The significance lies in the fact that identification of risk factors is important to screen high-risk patients to prevent development of foot ulcers and its associated morbidity.[9] The greatest risk factors for developing foot ulceration are neuropathy, arterial disease, foot deformity and peripheral neuropathy accounting for 80% of diabetic persons with foot ulcers. The contributing factors are poor glycemic control and microvascular disease.[10]

Conclusion

Diabetes Mellitus is a lifelong disease and diabetic foot complications can be life threatening, physically incapacitating, costly to treat and result in extensive morbidity.

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