



Presentation of Diabetic Foot: A Study At A Tertiary Care Center

KEYWORDS

Diabetic foot, Wagner grading, gangrene

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ABSTRACT *Background:* Diabetes Mellitus is most commonly diagnosed in those over 40 years of age with neuropathy being major cause for diabetic foot complications in India. Here in this study, we intended to find out varied mode of presentation of diabetic foot infections

Materials and methods: Prospective study was carried with 200 patients admitted for diabetic foot, clinical examination, radiological and blood investigation was done.

Results: 46% of patients were in 46-55 age group with predominantly seen in males (64%) who had history of diabetes for past 25 years with major presentation as gangrene of toes and abscess with 25% and 27% respectively.

Discussion: Ulceration, infection, gangrene and followed by lower extremity amputation are complications often encountered in patients with diabetes mellitus. It is difficult to assess the severity of ischemia by history and physical examination and combination of different types of non-invasive laboratory and radiological investigation like duplex ultrasonography may be necessary.

Introduction

The feet are at the mercy of various diabetic complications and problems such as ulceration and resistant deep infections often cause long and expensive hospital admissions. Ulceration and severe ischemia leading to gangrene of toes and foot are common problems.¹ Diabetes Mellitus is most commonly diagnosed in those over 40 years of age and the incidence rises to a peak at 60-65 years.¹

Neuropathy really sets the stage as a single most frequent cause for diabetic foot complications in India. Clinical and sub clinical neuropathy is present in India upto 37%.² It is generally believed that 75-90% of patients with foot lesions have neuropathy in India and 10-15% have vasculopathy. There would be some who have neuro ischaemic foot as well.² It is apparent that foot care problems in diabetic practice are substantial, costly, disabling and associated with high mortality. In this study we intend to find out the mode of presentation of diabetic foot infections

MATERIALS AND METHODS

A prospective study was carried out on 200 diabetic patients with foot ulcers over the period Jan 2012 – Jan 2015 at Father Muller Medical College hospital. Principles of convenience sampling were applied for collecting data in the study.

Diabetic foot infection is defined as the presence of ulcers (superficial to deep) on examination or evidence of inflammation, i.e cellulitis or purulent discharge, or evidence of necrosis, with or without osteomyelitis or systemic toxicity.

Diabetics were diagnosed on the basis of fasting plasma glucose of 126 mg/dl and above or if symptoms were present (i.e polyuria, polydipsia, polyphagia, weight loss, and blurred vision) and a random plasma concentration of 200 mg/dl or more, on 2 different occasions.

A questionnaire was developed to record the medical history, examination details. The extent of foot infection was assessed based on Wagners classification as follows:

- Grade 1: ulceration involving only the dermis
- Grade 2: ulceration involving tendons and/or joint capsules
- Grade 3: extending to bone, usually causing osteomyelitis
- Grade 4: localized gangrene
- Grade 5: gangrene involving a major part of the foot

The method of study

All patients admitted to surgical wards as above were considered as data source using clinical proforma. It is a simple case study where the mode of presentation and the percentage of patients going for surgical intervention was studied.

a) Inclusion Criteria

- All patients in the age group of 25-65 years
- Patients with a known history of diabetes and diagnosed diabetic on admission with a diabetic foot.

b) Exclusion Criteria

- Patients with systemic disease like IHD are not included in the study.
- Patients with venous ulcers are not included in the study.

X-ray foot was done to know any features of osteomyelitis, Microbiological – pus for culture and sensitivity to administer proper antibiotics.

Results and discussion

On evaluation of the age distribution in our study we had in the age group 25-35years 24 patients , 36-45 years 56 patients , 46-55 years 93 patients and 56-65years 27 patients respectively

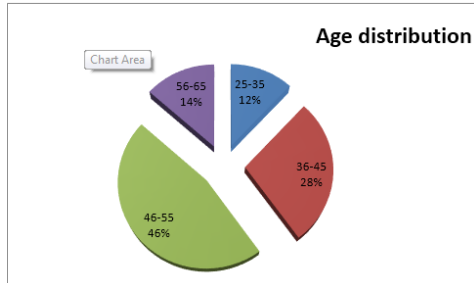


Fig 1: Age Distribution

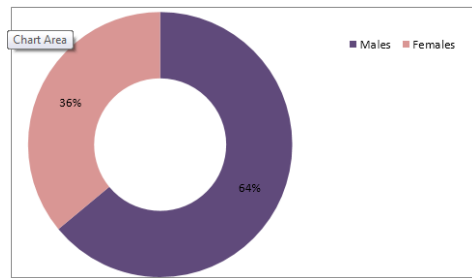


Fig 2 : Sex distribution

Majority of the patients receiving treatment for diabetic foot were males 128 patients (64 %), while females accounted for only 28 patients 36 % indicating a marked difference on basis of the gender

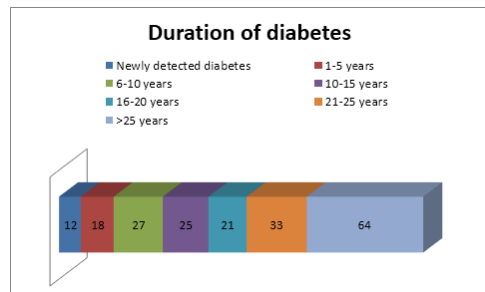


Fig 3 : Duration of Diabetes

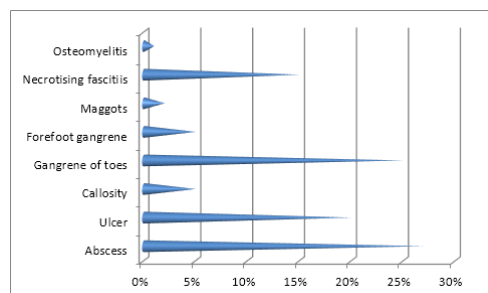


Fig 4 : Mode of presentation of diabetic foot

Wagner distribution: In this study, it was observed that grade 1, 3 and 4 had almost equal distribution of 29%, 27% and 24% respectively, while 19% belong to grade 2 category.

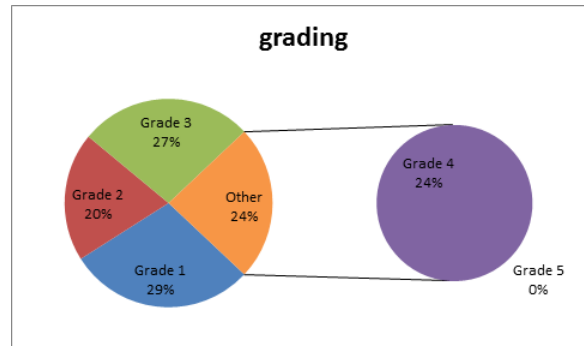


Fig 5 : Wagners Grading

Discussion

Worldwide diabetes affects more than 194 million people and the figure is expected to reach 333 million by the year 2025. With the maximum number of cases being in developing countries, diabetes is a global problem. India has the highest number of diabetic patients and is considered as the “diabetic capital of the world.”

Diabetic foot ulcer is a rising health problem with raising prevalence of diabetes. It is the most important cause of non-traumatic foot ischaemia. Diabetic foot ulcers are primarily due to neuropathy and / or ischaemic and are frequently complicated by infection. Up to 85% of all diabetic foot related problems are preventable through a combination of good foot care and appropriate education for patients and health care providers.³

It is often difficult to assess the severity of ischemia by history and physical examination alone: a combination of different types of non-invasive laboratory testing may be necessary. Duplex ultrasonography can provide accurate information with little risk to the patient and so should be readily obtained.⁴

Ulceration, infection, gangrene and lower extremity amputation are complications often encountered in patients with diabetes mellitus. These complications frequently result in extensive morbidity, repeated hospitalizations and mortality. Not all foot complications can be prevented, but it is possible to dramatically reduce their incidence through appropriate management and prevention programs. The multidisciplinary approach to diabetic foot disorders has been demonstrated as the optimal method to achieve favorable rates of limb salvage in the high-risk diabetic patient.⁵

Study conducted to investigate whether color duplex imaging alone could safely and effectively be used to diagnose lower limb arterial lesions. Duplex imaging was used to diagnose and guide percutaneous transluminal angioplasty in 50 legs of 45 patients. There were 53 stenosis and two occlusions. There were no complications during or after any of the procedures and 46 of the 47 symptomatic legs were markedly improved at a median follow-up of 23 days. ⁶

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