

Our Experience of Diabetic Foot, Evaluation and Management according to Wagner's Classification

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A B S T R A C T

Introduction: The most important complication in diabetic patients are Diabetic foot which represents a major medical, social and economic problem worldwide that significantly influence the diabetic patients quality of life. The most common method for the management and evaluation of diabetic foot and ulcers has been assessed by Wagner's classification. In this present study we used Wagner's classification for evaluation and management of diabetic foot patients.

Material and Methods: This was a prospective study was conducted by General surgery department, ASRAM Medical College, Eluru between December 2016 to December 2017. All cases diagnosed with diabetic foot were selected to inpatients of ASRAM Hospital, Eluru.

Results: Age group of 41-60 years and above 61 years showing the risk of diabetic foot ulcers in this study. In gender, males are more affected (72%) than females (38%) and most common age group fall in 41-60 years for both males and females. Neuropathy may influence the diabetic foot ulcers irrespective of gender. Nature of lesions showed that Deep thickness ulcers were higher in this study 36% followed by others. Wagner's classification showed Grade II is more prevalent in this study.

Conclusion: Glycaemic control and proper foot care, education about diabetic foot are key factors for better out come and quality of life.

Key words: Diabetic Foot Ulcers, Wagner's Classification

INTRODUCTION

Diabetes mellitus (DM) is a common metabolic disorder affecting 20% of the population in various parts of the world¹. According to International Diabetes Federation (IDF) it was estimated that 80% of people with diabetes live in developing and underdeveloped countries with lower income including India. India is home of 69.1 million diabetic patients with overall frequency of 9.3% and second largest country after china². In India the incidence of diabetes is higher in urban population (12-17%) than in rural population (2.4%)³.

An increasing number of patients with diabetes translates into an increase in burden of diabetic complications not limited to Lower limb extremity complications and Microvascular diseases. Lower limb extremity disease peripheral neuropathy, peripheral arterial disease (PAD) and foot ulcers, infections and lower extremity amputations⁴ are twice as common in diabetic subjects as compared with non diabetic persons and which requires to hospitalization and may lead to disability among the diabetic patients⁵. Recent studies suggesting that foot ulcer complications are increasing and much care has to be taken. The prevalence of foot ulcers in diabetes is low (3%) in India than that of 25% in other developing countries^{6,7}. Due to the presence of peripheral neuropathy and vascular diseases in diabetic patients it may increase more than 10%

of the burden of diabetic foot ulcers^{8,9}. Other risk factors for diabetic foot ulcers are age, weight, type of diabetes, personal habits and self care practice of foot¹⁰⁻¹⁴. There are preventive strategies for diabetic foot ulcers shown to be cost effective, though diabetic foot ulcers are still occurring frequently and challenging the individual and the health care system.

Therefore, this study aimed to assess diabetic foot ulcers and associated factors among adult diabetic patients attending the General Surgery Outpatient department at ASRAM Hospital, Eluru, by Wagner's classification. This study results may helps to decrease the incidences of diabetic foot ulcers and associated complications.

MATERIAL AND METHODS

This was a prospective study was conducted by General surgery department, ASRAM Medical College, Eluru between December 2016 to December 2017. The study was approved by Institutional Ethics Committee, ASRAM hospital, Eluru. All patients were enrolled after taking written consent form. In the present Prospective hospital-based study, all cases diagnosed with diabetic foot were selected to inpatients of ASRAM Hospital, Eluru. Though a total of 100 eligible cases were identified and successfully interviewed according to a structured questionnaire. Data was collected about Demographic factors,

ethnicity, socioeconomic status, smoking habits, tobacco chewing, alcohol intake history and occupational exposures. Clinical parameters include foot ulcers onset, duration and progression of the disease. Wagner’s classification¹⁵ for diabetic foot was used for evaluation of ulcers. Neurological assessment was performed including light touch, pinprick, position sense and vibration sense. Vascular assessment was done by examining capillary refill and distal pulses of the foot which included dorsalis pedis, posterior tibial, anterior tibial, popliteal and femoral arteries.

STATISTICAL ANALYSIS

Descriptive statistics like mean and percentages were used to interpret the results.

Variables	No of Patients (n=100)
Age (in years)	
21-40	12 (12%)
41-60	50 (50%)
>61	38 (38%)
Gender	
Males	72 (72%)
Females	28 (28%)
Neuropathy	
Neuropathy Present	62 (62%)
Neuropathy Absent	38 (38%)
Nature of Lesion	
Superficial ulcers	17 (17%)
Deep thickness ulcers	36 (36%)
Cellulitis	21 (21%)
Abscess	10 (10%)
Gangrene	15 (15%)
Necrotizing fasciitis	01 (01%)
Distribution according to Wagner’s classification	
Wagner’s Grade:	
Grade 0	00 (0%)
Grade I	17 (17%)
Grade II	36 (36%)
Grade III	27 (27%)
Grade IV	14 (14%)
Grade V	06 (06%)

Table-1: Clinico demographic characteristics of cases.

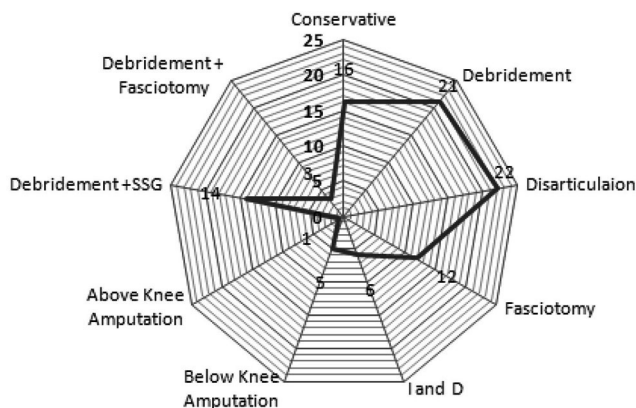


Figure-1: Treatment modalities in the present study

RESULTS

Table 1 shows the clinico-demographic factors from the patients of present study. The data shown that incidences of diabetic foot is more in age group of 41-60 years age groups and above 61 years showing the risk of age factor. In gender, males are more affected (72%) than females (38%) and most common age group fall in 41-60 years for both male and females.

Irrespective of gender incidence of neuropathy condition was higher when compared with non neuropathy patients. Nature of lesions showed that Deep thickness ulcers were higher in this study 36% followed by cellulitis, Gangrene, Abscess, superficial ulcers, and necrotizing fasciitis.

Patients were stratified according to Wagner classification, showed that Grade II (36%) frequency is higher in our study followed by grade III, grade I, grade IV and grade V.

Of the 100 diabetic patients the most common procedure followed was Disarticulation (22%) and Debridement (21%). For other patients conservative treatment (16%) and procedures like Debridement +SSG (14%), Fasciectomy (12%), I and D (6%), amputations (6%) was performed (Fig 1).

DISCUSSION

For years, Wagner’s classification for diabetic foot ulcers is using for the assessment and management of the diabetic foot due to it is a simplest, best known method for evaluation and management of diabetic foot ulcers. Age groups of the present study shown that age range of 40-60 years and above are in higher risk group. The results are in accordance with Ahmed et al 2013¹⁶. The results of the present study are in similar with Anil gupta et al., 2016 and Ali Sm et al., 2001 where the males are predominantly have risk of diabetic foot ulcers when compared with females^{17,18} (table 1). Regarding to peripheral neuropathy, the present study showed a higher number of cases than absence of neuropathy may be associated with diabetic complication among the patients group¹⁹. After seeing the results, Neuropathy (62%) may be an important risk factor for diabetic foot infections. According to the Wagner classification 36% patients had grade II disease and occupied highest frequency in this study. In the present study after assessing patients with diabetic foot ulcers by Wagner’s classification, the most important initial finding need to asses in the patients is whether patient had a neuropathic or not? If the patient is known to be neuropathic, pressure relief was the mainstay of treatment. We found poor vascular status in few cases, those cases were referred to vascular surgeon for further management.

CONCLUSION

This study confirmed that frequency of diabetic foot ulcers are quite common among diabetic population and thus, Glycaemic control, proper foot care and education about diabetic foot is key factors for better out come and quality of life.

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