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RESEARCH ARTICLE

MANAGEMENT OPTIONS IN TREATMENT OF DIABETIC FOOT ACCORDING TO WAGNERS CLASSIFICATION

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ABSTRACT

Diabetic foot is a common complication of diabetes mellitus which affects 15% of diabetic patients in their lifetime. Effective management of diabetic foot can reduce severity of complications such as preventable amputations and possible mortality, and can also improve overall quality of life. The Wagner classification is most commonly used for grading diabetic foot ulcers. Wagner developed a classification system and a treatment algorithm for each grade of ulcer. He asserted that ischemic index derived from Doppler flow pressures is an essential baseline test to predict ulcer healing. The aim of this study was to evaluate and manage different lesions of diabetic foot according to Wagner classification. We propose a treatment-oriented assessment of diabetic foot ulcers based on a cross-examination of the medical, foot, and wound history; a systemized and detailed physical examination; and the results of complementary diagnostic procedures. The pathophysiology and treatment of diabetic foot ulcers are reviewed. While these guidelines cannot dictate the care of all affected patients, they provide evidence based guidance for general patters of practice.

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INTRODUCTION

Diabetic foot ulcers are main cause of hospitalization in diabetic patients. Patients with diabetes mellitus are at higher risk of lower extremity complications than their non diabetic counterparts. Every year approximately 5% of diabetic patients develop a foot ulcer. Approximately 15% of all diabetics develop foot problems during course of their illness. Diabetic foot ulcers carry a significant risk of amputation. Therefore diabetic foot disease has major medical, economic and social consequences. It is very difficult to treat if proper protocol is not followed, resulting in longer hospital stay. Patients with diabetes have increased risk of lower extremity amputations and main cause is diabetic peripheral arterial disease accelerated by direct damage to nerves and blood vessels by high blood glucose levels. Wound healing is also impaired from affected collagen synthesis. Diabetic vascular disease has three main components: arteritis, neuropathy and large vessel atherosclerosis. The diabetic foot ulcers are often deeper and more frequently infected than other leg ulcers reflecting severe end vessel ischemia and opportunistic infection which is common affliction of diabetes. Factors such as age and duration of the disease will increase its incidence. Once tissue damage has occurred in form of ulceration or gangrene, aim is preservation of viable tissue. Diabetic foot ulcers are commonly classified according to Wagner classification. Wagner classification assesses ulcer depth and presence of osteomyelitis or gangrene.

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Standard treatment of diabetic foot according to wagner classification

Grade - 0 Foot at Risk, Prevention
Grade – I Localized, Antibiotics & glycemic superficial ulcer control
Grade – II Deep Ulcer to Debridements, bone, Antibiotics and glycemic control ligament or joint
Grade - III Deep abscess, Debridements, some osteomyelitis form of amputation
Grade – IV Gangrene of Wide debridement and amputation toes, forefoot
Grade - V Gangrene of Below knee amputation entire foot

MATERIALS AND METHODS

This was a prospective study conducted at Government Medical College, Jammu and included 100 patients with diabetic foot ulcer presenting from May 2014 to August 2015. The patients were enrolled from surgical and medical outdoor

clinics, emergency units, and from other wards of the hospital. A detailed history was obtained regarding the duration of the diabetes and its type whether insulin dependent (type I) or on oral hypoglycaemic agents (type II). They were asked about compliance and control of diabetes. A detailed history was obtained about the foot ulcers, its onset duration and progression. A detailed foot examination was performed and ulcers were classified according to Wagner's classification. Vascular evaluation was performed checking capillary refill and distal pulses of the foot which included dorsalis pedis, posterior tibial, popliteal and femoral arteries. Neurological examination included light touch, pinprick, position sense and vibration sense on every patient, and data was recorded on the specified proforma. The patients were evaluated and managed by classifying their disease according to Wagner's classification for diabetic foot. Data was compiled and analyzed using SPSS version 16.0, and frequencies were calculated.

RESULTS

The data revealed that diabetic foot diseases affected males somewhat more frequently (66%) as compared to females (34%); the male to female ratio was 1.94:1. The most common age groups of diabetic patients with foot involvement were the 4th and 5th decades. 38 patients (38%) had insulin dependent diabetics; and 87 (87%) of them were on irregular treatment. Other 58 patients (58%) had non-insulin dependent diabetes; out of which 19 (70.0%) were on irregular treatment. Remaining 4 patients (4%) were not getting any treatment for their disease. The grade frequency of diabetic foot according to Meggitt and Wagner classification is shown in above table. The commonest disease was Grade 4 that comprised of 34 patients, followed by Grade 2 in 22 patients, followed by Grade 3 in 16 patients. These patients were managed according to Wagner classification as shown above. Conservative management with good diabetic control, antibiotic cover and foot care was carried out in 25 patients. Surgical intervention was carried out in rest of 75 patients. The commonest procedure was incision & drainage of foot abscess and debridement, that was performed in 41(41 %) of patients; while 35 (35.0%) patients needed some form of amputation. Multiple amputations were performed in 5 (5%) patients.

Treatment	No. of Patients	Percentage
Conservative	25	25
surgical		
Incision and drainage	4	4
Debridement	36	36
Amputations	35	35
Rye's	4	11
Transmetatarsal	7	19
BKA	12	35
AKA	10	3
Multiple	2	5

Conclusion

Diabetic foot disease usually presents in older age group and is source of great morbidity. We stress the need for a clinical diagnosis of diabetic foot ulcers. Regarding treatment, we propose a multidisciplinary approach prioritizing invasive infection drainage, necrosis debridement, and the prompt start of empirical antibiotic therapy, followed by complete and appropriate vascular reconstruction. For severe Diabetic foot ulcers, we suggest that negative pressure wound therapy (NPWT) be included in the treatment pathway. We also provide rules for managing particular situations, such as osteomyelitis.

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