

DIABETIC FOOT ULCER: A CASE REPORT***Shraddha Devarshi¹ and Vinod Kumar¹**Department of Clinical Pharmacy (Pharm.D), Poona College of Pharmacy, Bharati Vidyapeeth Deemed University,
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ABSTRACT

Introduction: Diabetic foot ulcer is the most dreaded complication of diabetes mellitus. It is imperative for diabetes patients to obtain optimum glucose control by strictly adhering to medication therapy, diet and exercise in order to reduce long term complication associated with non-adherence to treatment recommendation. **Case history:** Fifty six years old patient who was a known case of Type-II Diabetes Mellitus and on irregular medications was admitted with history of gangrene of right second toe which was later amputated. Blood sugar levels varied between fasting 40-293 mg/dl and post prandial up to 238 mg/dl. **Conclusion:** Non-adherence to the treatment of diabetes is the major cause for the occurrence of the complication like diabetes foot ulcer in diabetic patients. Here the clinical pharmacist can play a role in patient education regarding his disease and importance of adherence to treatment, timely monitoring of blood glucose, proper foot care so as slow down disease progression.

KEYWORDS: Diabetes, Diabetic foot ulcer, Non-adherence.**INTRODUCTION**

Diabetes is the leading cause of complications including blindness from diabetic retinopathy, kidney failure and resulting dialysis, non-traumatic knee amputation. Nerve damage occurs in 60-70% of diabetic population.^[1] Diabetic foot ulcer is the most dreaded complication of diabetes mellitus.^[2]

It is imperative for diabetes patients to obtain optimum glucose control by strictly adhering to medication therapy, diet and exercise in order to reduce long term complication associated with non-adherence to treatment recommendation¹. Lower limb amputation and foot ulcer account for considerable morbidity, mortality and healthcare expenditure among patients with diabetes.^[3]

Neuropathy, a major etiologic component of most diabetic ulcerations, is present in more than 82% of diabetic patients with foot wound. This lack of protective sensation, combined with unaccommodated foot deformities, exposes patients to undue sudden or repetitive stress that leads to eventual ulcer formation with a risk of infection and possible amputation.^[4] This case history demonstrates the complications of diabetes on feet due to non adherence to medication therapy.

CASE HISTORY

Fifty six years old patient who was a known case of Type-II Diabetes Mellitus and on irregular medications was admitted with history of gangrene of right second toe which was later amputated.

On examination patient was afebrile, pulse was 78/min, blood pressure 110/70 mm Hg. Local examination of left lower limb revealed swelling around ankle, mild tenderness, edema, redness, local rise in temperature, 2×1 cm swelling crack over heel of left foot, posterior tibial / dorsalis pedis not palpable. While local examination of right lower limb revealed ulcers, one 2×3 cm over medial surface and 4×5 cm over lateral plantar surface. There was minimal slough, no discharge, red granulation and all peripheral pulsations palpable.

Patient was started on broad spectrum antibiotics after wound debridement and dressing. Blood sugar levels varied between fasting 40-293 mg/dl and post prandial upto 238 mg/dl. Below knee amputation was done as it was not possible to save his left leg due to necrotic patch over anterior tibial and dorsalis pedis which was not palpable.

DISCUSSION

Diabetes causes peripheral neuropathy which may manifest in several different forms, including sensory, focal/multifocal and autonomic neuropathies. More than 80% of amputations occur after foot ulceration or injury, which can result from diabetic neuropathy.^[5] Peripheral neuropathy may also cause muscle weakness and loss of reflexes, especially at the ankle, leading to changes in the way a person walks. Foot deformities, such as hammertoes and the collapse of the midfoot, may occur. Blisters and sores may appear on numb areas of the foot because pressure or injury goes unnoticed.^[6] Left

untreated, bacterial and fungal infections, as well as foot ulcers, can lead to amputation.^[7,8] The main goals of diabetic foot care involve a combination of preventive strategies, including patient education, involvement, and adherence to physician recommendations, as well as maintaining tight glycemic control and performing routine skin, foot, and nail inspections.^[9-11] Better medication adherence (MA) is associated with improved disease control (glycated hemoglobin [HbA_{1c}], blood pressure and lipid profile) and decreased health care resource utilization in patients with type 2 diabetes mellitus (T2D).^[12,13] This has translated into lower health care costs, lower hospitalization rates, fewer diabetes-related complications, increased quality of life, and a lower incidence of death.^[14,15] Common reasons for this include the complexity of the drug regimen, fear of side effects, and misperceptions about T2D as an illness. Other possible reasons include financial constraints and poor social support for refilling prescriptions, physical and psychological restrictions affecting daily adherence to prescribed medications and in particular, increased comorbidity, such as complications of T2D, visual impairment, diabetic foot problems, health literacy, cognitive decline, DRD (Diabetes Related Distress) and depression. Physician characteristics and health care settings are other potential factors that may affect patient participation in medication adherence.^[16-19] Cost of drugs which is one of the main barriers to adherence that has been quoted in the literature can be minimized by provision of free drugs to patients when they are available in the hospital.^[20] Elderly patients are more likely to be non-compliant and so educational programs on diabetes self management should be conducted for which there is a growing need for more research in this area.^[21] This case demonstrates the complications of diabetes mellitus due to non-adherence to treatment. The patient had dense neuropathy that means he was unaware of injury to his foot. The ulcer was not treated timely which developed into serious health problem and lead to amputation of his foot. In this patient it was important to address the reasons for non-adherence and measures to improve it. Here the clinical pharmacist can play a role in patient education regarding his disease and importance of adherence to treatment, timely monitoring of blood glucose, proper foot care so as slow down disease progression.

CONCLUSION

Non-adherence to the treatment of diabetes is the major cause for the occurrence of the complication like diabetes foot ulcer in diabetic patients. Here the clinical pharmacist can play a role in patient education regarding his disease and importance of adherence to treatment, timely monitoring of blood glucose, proper foot care so as slow down disease progression. Proper Counseling can improve patient's knowledge about disease, treatment and self care improving adherence to treatment.

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