

## A Clinical Study on Risk Factors of Diabetic Foot Disease

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### ABSTRACT

**AIM:** To assess the risk factors of Diabetic foot disease among the diabetic patients such as gender, older age, duration of diabetes more than 10 years, poor glycemic control, peripheral vascular disease, self care and smoking

**MATERIALS AND METHODS:** A Retrospective study includes 50 Diabetic foot disease patients admitted in Department of General surgery in Government Dharmapuri Medical college Hospital from October 2020 to October 2021

**INCLUSION CRITERIA:** Patients admitted in general surgery wards with Diabetic foot disease

**EXCLUSION CRITERIA:** Diabetic Foot disease patients but having serious comorbidities (cardiac diseases).

**RESULTS:** In this study group majority of the study population presented with grade 3 ulcer that is 30%. About 28% came with Grade 1 ulcer and 22% with grade 2 ulcer. when related to age most of the study population 72% were above 60 yrs of age 36 out of 50, majority 82% are males 41 out of 50, comparing with the duration of diabetes majority 78% were above 10 years of diabetes 39 out of 50, blood sugar where uncontrolled in 88% that is 46 out of 50 patients. peripheral vascular disease was present in 64% that is 32 out of 50 patients, self care was poor due to lack of knowledge in 78% that is 39 out of 50 patients, out of 50 patients 28 cases were smokers that is 56%. on reviewing this study the diabetic foot disease was more among the smokers, old age males with uncontrolled diabetes with peripheral vascular disease with more than 10 years of diabetes with poor self care.

**CONCLUSION:** At the end point of this study diabetic foot disease is common among the old age male smokers with poorly controlled diabetes who lacks knowledge of self care and having peripheral vascular diseases. so the disease is prevented by proper diabetic blood glucose monitoring, early treatment of foot ulcers and multidisciplinary approach for advanced ulcers so we can prevent the amputations.

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### I. INTRODUCTION

Diabetes mellitus is assuming pandemic proportions worldwide and so are its associated long-term complications<sup>1</sup>. In addition to the delayed complications like nephropathy, retinopathy, neuropathy, etc., diabetic foot disease is one of the most common and dreaded complication of diabetes mellitus, especially in developing countries. According to the World Health Organization (WHO) and International Working Group on the Diabetic Foot<sup>2</sup>, diabetic foot is defined as the foot of diabetic patients with ulceration, infection, and/or destruction of the deep tissues, associated with neurological abnormalities and various degrees of peripheral vascular disease in the lower limb. Diabetic foot is the single-most common cause of nontraumatic lower limb amputation, accounting for almost 40 to 60% of nontraumatic amputations<sup>3</sup>.

### PATHOGENESIS OF DIABETIC FOOT DISEASE

Neuropathy appears to be the single-most important factor not only in developing diabetic foot but also in delaying the healing process<sup>4</sup>. Neuropathy may be due to insufficiency of intrinsic blood supply to peripheral nerves, may be autoimmune or microvascular ischemia caused by the accumulation of advanced glycosylated end products<sup>5</sup>. Peripheral vascular disease is another important risk factor and is mainly due to widespread and often multisegmental atherosclerosis of large vessels of the leg. It is often bilateral and distal involving tibial and peroneal vessels below knee due to unknown reason<sup>6</sup>.

**UNIVERSITY OF TEXAS WOUND CLASSIFICATION<sup>7</sup>**

GRADE 0	Pre or Postulcerative lesion completely epithelialized
Grade 1	Superficial wound not involving tendon, capsule, or bone
Grade 2	Wound penetrating to tendon or capsule
Grade 3	Wound penetrating to bone or joint

**MANAGEMENT:**

It involves a multidisciplinary team approach involving orthopedic surgeon, diabetologist, vascular surgeon, general surgeon, pathologist, psychiatrist, occupational, and physical therapist and their approach itself can reduce the incidence of amputation by up to 85%.

**AIM**

To assess the risk factors of Diabetic foot disease among the diabetic patients such as

- gender,
- older age,
- duration of diabetes more than 10 years,
- poor glyceemic control,
- peripheral vascular disease,
- self care
- smoking

**II. MATERIALS AND METHODS:**

A Retrospective study includes 50 Diabetic foot disease patients admitted in Department of General surgery in Government Dharmapuri Medical college Hospital from October 2020 to October 2021

**OBJECTIVES:**

To study the risk factors of diabetic foot disease among diabetes mellitus patients at a tertiary care hospital.

- **INCLUSION CRITERIA:** Patients admitted in general surgery wards with Diabetic foot disease
- **EXCLUSION CRITERIA:** DIABETIC Foot disease patients but having serious comorbidities(cardiac diseases).

**III. OBSERVATIONS:**

RISK FACTORS	NUMBER OF CASES
1)AGE <60 >60	14(28%) 36(72%)
2)SEX MALE FEMALE	41(82%) 9(18%)
3)DURATION OF DIABETES <10 Years >10 Years	11(22%) 39(78%)
4) FASTING BLOOD SUGAR 121-150 mg >150 mg	4(12%) 46(88%)
5)PERIPHERAL VASCULAR DISEASES Non palpable peripheral pulse Palpable peripheral pulse	32(64%) 18(36%)
6)SELF CARE GOOD POOR	11(22%) 39(78%)
7)SMOKING PRESENT ABSENT	28(56%) 22(44%)

**GRADES OF DIABETIC FOOT ULCER:**

GRADES	NUMBER OF CASES	PERCENTAGE(%)
0	10	20
1	14	28
2	11	22
3	15	30

#### IV. DISCUSSION

In this study group majority of the study population presented with grade 3 ulcer that is 30% .About 28% came with Grade 1 ulcer and 22 % with grade 2 ulcer.when related to age most of the study population 72% where above 60 yrs of age 36 out of 50,majority 82% are males 41 out of 50,comparing with the duration of diabetes majority 78% where above 10 years of diabetes 39 out of 50,blood sugar where uncontrolled in 88% that is 46 out of 50 patients.peripheral vascular disease was present in 64% that is 32 out of 50 patients, self care was poor due to lack of knowledge in 78% that is 39 out of 50 patients ,out of 50 patients 28 cases were smokers that is 56%.on reviewing this study the diabetic foot disease was more among the smokers,old age males with uncontrolled diabetes with peripheral vascular disease with more than 10 years of diabetes with poor self care

#### V. CONCLUSION

From the present study we conclude that diabetic foot is common, yet potentially disastrous complication of diabetes mellitus if not managed effectively. Diabetic foot disease is more common in patients with long- standing diabetes, smokers, poor self care and untreated diabetic patients. Chances of getting diabetic foot increase many folds if the patients develop PVD, poor glycemic control, and previous history of ulcers. Management of diabetic foot, therefore, is a multidisciplinary approach that requires not only medical and surgical management but also patient's education at all levels. The only way going forward for minimizing the morbid condition of diabetic foot disease is to educate the patients regarding its modifiable risk factors and the effective prevention so as to reduce the chances of development of primary ulcers and thereby amputations of Lowerlimb

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