

# Epidemiological Aspects of Diabetic Foot

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## ABSTRACT

Epidemiological data regarding diabetic foot problems from 11,300 diabetic patients registered at the clinic is presented. A comparison has been made between this data and available data from Western literature.

The significant difference between our data and Western data were: mean age 53.55 yrs vs. 68 yrs, mean age at amputation was 61.25 yrs vs. 75 yrs, cost of treatment from diagnosis to healing was US\$ 500 vs. US\$ 14,627, cost if major amputation was required was US\$ 2000 vs. US\$ 73,702, survival rate at 2 years after major amputation was 83.4% vs 30%, contralateral limb amputation rate was 11.11% vs 30 to 50%, above knee/below knee amputation ratio was 1:17 vs. 1:2.

Younger age, dominant role of treatable infection and less prevalence of peripheral vascular disease are probable explanations for the favourable results seen in our patients.

## INTRODUCTION

Diabetic foot is one of the most devastating complications and leads to suffering, disability, loss of time from work, hospitalisation and great expense to both the patient and the community. There are few data on the prevalence of diabetic foot problems, even in developed countries. Unfortunately there are virtually no figures on the prevalence of diabetic foot problems from developing countries. Present study deals with epidemiological aspects of diabetic foot from larger number of diabetic patients (11,300) registered at our clinic. A comparison has been made between this data and the data available from Western literature and the differences seen between the two populations are highlighted.

## MATERIAL AND METHODS

The present study comprises of 524 patients with diabetic foot problems. There were 383 males and 141 females. All patients underwent thorough clinical examination. Feet were examined for evidence of sensory neuropathy. Peripheral vascular disease was assessed by ankle/branchial pressure index using vascular doppler. Diabetes was controlled by diet and multiple injections of insulin.

appropriate antibiotics depending upon clinical findings and bacterial culture reports were given. A team consisting of diabetologist, surgeon, nurse & physiotherapist managed each case in coordination with the common aim of limb salvation.

## RESULTS

In our series of 524 patients with diabetic foot, 18 (3.43%) required major amputation, 86 required (16.41%) minor amputation. Table 1 and 2 show epidemiological aspects of our cases with comparative data from Western Literature (1,2,3). 420 (80.15%) of our cases were treated conservatively without any amputation. Amongst those with major amputation 17 (3.24%) required transtibial, below knee amputation and one (0.19%) required transfemoral, above knee amputation. Amongst those with minor amputations 58 (11.06%) required amputation restricted to toes, 20 (3.81%) required ray resection and 8 (1.52%) required transmetatarsal amputation.

**Table 1**  
**Epidemiological aspects of the diabetic foot**

	Western	Our series
Prevalence	3%	3.61%
Mean age (yrs.)	68	53.55
F/M ratio	1 : 2.7	1 : 3
Hospital admissions	16%	24%
Hospital days	23%	35%
Cost, foot ulcer diagnosis to healing	US\$ 14,627	US\$ 500

**Table 2**  
**Epidemiological aspects of the diabetic foot**

	Western	Our series
Mean age at amputation	75 yrs.	61.25yrs.
Survival at 2yrs after major amputation	30%	83.4%
Contralateral limb amputation	30 to 50%	11.11%
Above knee/below knee amputation ratio	1 : 2	1 : 17
Cost if major amputation is required	US \$73,702	US\$2000

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## DISCUSSION

Mean age at diagnosis of diabetic foot and mean age at major amputation was significantly lower as compared to Western literature. This should be the sole reason to explain favourable results seen in our series specially in reference to survival at 2 years after major amputation, contralateral limb amputation rate, above knee to below knee amputation rate. Older patients reported in Western literature are more likely to have advanced atherosclerotic disease involving heart, cerebral circulation, peripheral circulation and renal circulation thus adversely affecting mortality and contralateral limb amputation rate. Above knee amputation was common in Western population and above knee to below knee amputation ratio was 1:2 vs. 1:17 in Western vs. our series.

Majority of our patients have infection as a dominant feature in non-neuroischemic foot. In such cases local debridement, control of infection and diabetes, certainly improves the limb salvage. If the infection is fulminant, minor or at the most below knee amputation is enough to stop the advancing infective process. As against this in Western patients, where old age and neuroischemic limbs are common, advanced atherosclerosis, and multi-system involvement makes above knee amputation perhaps the right choice to reduce the overall mortality.

In one population-based study in Sweden (1) the cost of treating foot ulcer was US\$ 14,627 as compared to US\$ 500 in our patients. The cost of

treatment in-patients undergoing amputation was US\$ 73,702 in Sweden as compared to US\$ 2000 in our patients. This difference in cost of treatment is obviously due to marked economic disparity in two populations. Although cost of private treatment in India is less, majority of our patients have to bear the entire cost of the treatment as they are not medically insured and for them even this cost is substantial.

Although present study shows favourable results in Indian patients as compared to Western, it will not be surprising if one sees the change in scenario in next ten to thirty years. In India the number of amputation in diabetic patients is bound to increase due to several factors like increasing prevalence of diabetes, longer survival, more ageing population, continued use of tobacco, barefoot walking, careless home surgical attempt, late reporting to medical centre and poor hygienic conditions. Unless urgent steps are taken, India might emerge as a country with highest rate of amputations for diabetic foot.

## REFERENCES

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