

# Guest Editorial

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## Diabetic Foot: An Outcome of Increasing Longevity

Diabetes mellitus is considered one of the most challenging disorders among all noncommunicable diseases (NCDs). India has the second largest number of people living with diabetes after China, and according to the International Diabetes Federation, India presently has 69.1 million people with diabetes.<sup>1</sup> This number is expected to swell further to 100 million people by 2030, putting enormous pressure on the health care system. India faces an uncertain future as to how to deal with the humongous task of controlling the pandemic of diabetes mellitus. Increasing number of subjects with diabetes as well as increasing longevity translate to an overall increased burden of both chronic microvascular and macrovascular complications of diabetes including foot complications. Henceforth, more number of diabetic foot complications will be seen in the future because of the increasing prevalence of diabetes, which was 2.1% in the 1970s to the present 8.4 to 13.6% in various parts of the country.<sup>2</sup>

Like the developed nations, India has also moved from a high fertility–high mortality in the past century to a low fertility–low mortality state. The life expectancy at birth in India has exponentially increased from 26.8 years in 1921 to 67.8 years in 2014. This demographic transition over a century has led to a sizable number of elderly populations living longer. This increase in life span is attributed to the better availability of health care resources and lesser natural calamities and communicable diseases. This aging population has led to more number of people with NCDs, with diabetes mellitus among the four most common NCDs including cardiovascular diseases, chronic obstructive pulmonary diseases, and cancer. The number of subjects with diabetes less than 45 years old will remain the same, but the proportion will significantly increase among people more than 45 years because of the increasing longevity. These NCDs account for 40% of all hospital stays and more than third of all OPD visits by any patient to the hospital services.

Foot complications encompass a spectrum ranging from “at risk foot,” subtle deformities of the foot, diabetic foot ulcers (DFUs) and infections to Charcot’s neuroarthropathy and peripheral vascular disease (PVD)/gangrene of the foot. The lifetime risk of having DFU in a patient with diabetes is 15%, and the risk of lower extremity amputation is twice more likely than in nondiabetic subjects.<sup>3</sup> Diabetic foot complications are a significant contributor to morbidity and also to mortality. It is observed that the subjects with diabetic foot have more frequent hospitalizations and tend to have a longer hospital stay and a higher in-patient mortality.<sup>4</sup> The average cost of treatment of foot-related complications is highest among all other diabetic complications and estimated to be four times more compared with a subject without any diabetic complications.<sup>4</sup> A subject with diabetes has to spend about 5.7 years of his income for the treatment of a foot complication, which is quite draining in the absence of structured health insurance in our country.<sup>5</sup>

Foot complications are a consequence of peripheral neuropathy and PVD. Various epidemiological studies from India and the West have shown that the prevalence of both these risk factors increases with advancing duration of the disease and with advancing age.<sup>6,7</sup> The prevalence of PVD increases from 2% to 3% in the fourth decade to 25% by the 8th decade of life. Similarly, the prevalence of peripheral neuropathy increases from 5% at 30 years of age to almost 60% by the age of 80 years. The percentage of patients with peripheral neuropathy increases from 5 to 8% at diagnosis of diabetes to 50 to 60% by 30 years of disease duration. In addition, glycemic control, sight-threatening retinopathy, and frailty also increase with advancing duration of the disease. Therefore, the prevalence of DFU also increases with increasing duration of diabetes from 8.8% in subjects with the duration of the disease <6 years to 18.6% in subjects with the duration of the disease >20 years.

What can be done looking at the morbidity, mortality, and the cost of treatment of foot complications in patients with diabetes? More than two-thirds of patients with diabetes do not follow foot-care practice in our country, and only 2% approached health care facilities for foot-associated problems.<sup>7</sup> The cost-effective answer on the long-term basis for all chronic diseases including foot complications lies in primordial and primary prevention. The focus needs to be on preventive strategies for early detection of diabetic foot complications through routine screening and examination of the foot at each opportunity when patients seek health services. Foot complications in subjects



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with diabetes are often not sought and missed as an examination of the foot is not a routine by the clinicians and the major focus is beset on glucose levels. The attitude of patients also needs to be refurbished and the practice of daily foot examination inculcated among the patients. More proactive patient–caregiver education and interaction for an early recognition, prevention, and management of foot-related complication is the need of the hour.

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