

DIABETIC FOOT CARE

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Abstract : Diabetes is a serious chronic disease. In 2003 the global prevalence of diabetes was estimated at 194 million. This figure is predicted to reach 333 million by 2025 as a consequence of longer life expectancy, sedentary lifestyle and changing dietary patterns. This rise is likely to bring a proportional increase in the numbers of people with diabetes complications, including problems of the foot. Without action, more amputations are likely. 40-70% of all lower extremity amputations, are related to diabetes. 85% of diabetes-related amputations are preceded by foot ulcers. A co-ordinated foot-care strategy can reduce amputation rates by between 49% and 85%. This will require: (a) prevention; (b) multi-disciplinary treatment of foot ulcers; (c) appropriate organization; (d) close monitoring; (e) education of people with diabetes and healthcare professionals

INTRODUCTION

More than 190 million people in the world and 38 million in India have diabetes mellitus and too many of these patients suffer from diabetic foot disease, which may eventually lead to a lower limb amputation. Foot complications are one of the most serious and costly complications of diabetes. Foot disorders are a major source of morbidity and a leading cause of hospitalization for persons with diabetes mellitus. Foot ulcers and amputations are a major cause of morbidity and disability for people with diabetes. Approximately 15% of patients with diabetes will have an ulcer and 50% of patients will have diabetic peripheral neuropathy in their lifetime. Diabetes is one of the most common causes of lower limb amputation in our country; there are about 1-lakh diabetes-related foot amputations per year. The early recognition and management of risk factors for diabetic foot disease can prevent these adverse outcomes.

OBJECTIVES OF DIABETIC FOOTCARE

The main objectives of diagnosis and treatment of diabetic foot squel is around maintaining the patient ambulatory, productive member of the society. This may require the expertise of many different specialists on the diabetic foot care team.

EPIDEMIOLOGY OF DIABETIC FOOT

Three major pedal complications of diabetes are: (i) foot ulcers, (ii) foot infections and, (iii) Charcots foot; most common being foot ulcer. It is estimated that 15% of patients with diabetes will develop a foot ulcer. Several reports from population-based studies indicate an annual incidence for diabetic foot ulcers of 2-3%. About 20% of patients with foot ulcers subsequently require an amputation. While most ulcers can be successfully treated in the clinic or outpatient setting, infected and/or ischaemic foot ulcers are a major cause for diabetes related hospitalization.

RISK IDENTIFICATION

Risk identification is fundamental for effective preventive management of the diabetic foot disease. The risk of development of diabetic ulcers is increased in people who had diabetes > 10 years, are male, have poor glucose control or have cardiovascular, eye, or renal complications. The most important risk factors for ulceration are: (i) peripheral sensory neuropathy, (ii) peripheral vascular disease, (iii) structural foot deformity, limited joint mobility, (iv) ill fitting shoes, increased pressure- callus, erythema, (v) history of prior ulcers or amputation, (vi) trauma, high sugars, old age.

FOOT EXAMINATION

Every diabetic should get a thorough foot examination once a year from the Podiatrist (foot specialist). This examination includes an assessment of protective sensation, vascular status of feet, foot biomechanics, and high-pressure areas like callus and skin condition. The presence of erythema (redness), warmth, or callus formation indicates areas of tissue damage with impending breakdown. Bony deformity in feet, limited joint mobility and problems with gait and balance should be assessed.

Do's: (i) Close look, at the top and bottom of the feet, use a mirror or ask a family member for help; (ii) Check for red spots, bruises, cuts, swelling or cracks; don't forget to feel under and between the toes; (iii) Wash the feet every day with warm-not hot water and a mild soap; dry between the toes, if skin between the toes is wet and soggy (macerated), clean with spirit using cotton and apply antifungal powder; if the foot skin is dry, apply lanolin, urea base cream; (iv) Wear good fitting, soft shoes and thick, soft socks; (v) Cut your toe nails straight across and file the edges, this is to prevent ingrown toe nails; (vi) One should always avoid injuries on the feet by wearing sleepers or shoes all time.

Don'ts: (i) Do not use hot water bottles or heating pads on your feet as they can cause skin burns in someone with diminished sensation. (ii) Never cut a corn or callus with a blade or use a corn pads as they contain salicylic acid. (iii) Don't wear tight or torn shoes and tight socks.

PREVENTION OF FOOT PROBLEMS

The development of neuropathy or loss of sensation can be delayed significantly by maintaining good sugar control. Smoking should be stopped to reduce the risk of vascular complications and gangrene of the foot. People with neuropathy or high planter pressure (warmth, erythema or callus) should use well-cushioned shoes that redistribute the pressure. Callus can be debrided with a scalpel by a foot specialist only and not by self. Diabetic people with bony deformity (hammertoes, bunions) should wear extra wide shoes or with high toe box. Any injury or infection in a diabetic foot is a direct threat to the leg and should be treated promptly and aggressively.

Management of Foot Ulceration: Essentials are: (a) early control of infection; (b) maintenance of blood circulation; (c) regular debridement; (d) proper offloading.

Patient Education Patients with diabetes and high-risk foot conditions should be educated regarding the risk factors and their appropriate management. They should understand the implications of the loss of sensation in the feet, the importance of foot monitoring on a daily basis, proper foot care including nail and skin care, and the selection of proper footwear. Patients with neuropathy should always break in new shoes gradually to minimize the formation of injuries or ulcers. *Smoking cessation* is mandatory for diabetics. Proper education of the patients and good foot care team is necessary for reducing the number of amputations and improving the quality of foot care in our country.

RECOMMENDED READING

1. Kolte, M.L., Nielsen, B., Dolmer, M. Exsudat-management mit silberhaltigen Verbanden. Poster presented at the 7th conference of the Deutsche Gesellschaft für Wundheilung und Wundbehandlung (DGfW), Augsburg, Germany, 2003
2. Kolte, M.L., IARSEN-jOCHUMSEN, U., Nielsen, B. eXUDATE management of silver containing dressings. Poster presented at the 12th conference of the European Wound Management Association (EWMA), Granada, Spain, 2002.
3. White, R. (2001); British Journal of Nursing, The Silver supplement Part One, p.3-8
4. Lasdown, A.B.G et al. (2003); J of Wound Care, Vol 12(6)
5. Serup, Jergen, MD, Ph.D., A double-blind Comparison of two creams Containing Urea as the Active Ingredient, Published in ActaDerm Venereol, Suppl, 177 ,34-38, 1992.