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Assessment of risk factors for diabetic foot ulcer

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ABSTRACT

Diabetes mellitus is a group of metabolic disorders of fat, carbohydrate, and protein metabolism that results from defects in insulin secretion, insulin action, or both. Ulceration of foot in diabetes is common, clinical presentations are variable and management requires early expert assessment. 73 years old patient, an old case of type 2 diabetes mellitus, smoker and on irregular medical treatment was admitted with history of diabetic feet bilateral. Patient also had foul smelling discharge from left foot and had auto amputation of 2nd to 4th toe left foot due to gangrene. On examination patient was restless. General condition was poor. Local examination of left foot revealed gangrene of heel, sole and auto amputation of 3rd and 4th toe. Right foot had superficial ulcers over dorsum of 2nd and 3rd toe. Patient was investigated and broad spectrum antibiotics started after wound debridement and dressing. Blood sugar levels varied between fasting 150mg% to 1701mg% and post prandial up to 234 mg%. Patient was advised aerobic exercises of upper limbs, diabetic diet and oral hypoglycemic agents and has improved.

KEYWORDS- HbA1c, DFU, VLDL

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INTRODUCTION:

Ulceration of the foot in diabetes is common and disabling and frequently leads to amputation of the leg. A risk factor is any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury. Risk factors that are predictive and/or precursors of Diabetic Foot Ulcer (DFU) include direct and indirect causes. For example deformities are a direct cause of DFU. Indirect causes of DFU lead to wounds through secondary process. Most DFU occur because of a combination of direct and indirect causes. Direct causes make the sites more vulnerable to wound formation, and the indirect causes delay management and/or attenuate the healing/wound prevention processes**.**

CASE REPORT:

We report a case of 73 years old patient, smoker, an old case of type 2 diabetes mellitus, on irregular medical treatment with history of diabetic feet bilateral. Patient also had foul smelling discharge from left foot and had auto amputation of 2nd to 4th toe left foot due to gangrene. General condition was poor. Local examination of left foot revealed gangrene of heel, sole and auto amputation of 3rd and 4th toe. Right foot had superficial ulcers over dorsum of 2nd and 3rd toe. Patient was investigated and broad spectrum antibiotics started after wound debridement and dressing. Blood sugar levels varied between fasting 150mg% to 1701mg% and post prandial up to 234 mg%. Patient was advised aerobic exercises of upper limbs, diabetic diet and oral hypoglycemic agents and has improved.

INTERVENTION:

Patient was also diagnosed with poor eyesight and inability to follow optimal management such as lower extremity evaluation. Patient was referred to ophthalmologist for further evaluations of comormidities. Patient was suggested to get assistance for evaluation of his feet and also advised to quit smoking.

DISCUSSION:

This study included 105 patients identified based on the inclusion and exclusion criteria. Majority of the patients included in the study were males belonged to the age group of 55-64 years. Majority of the patients included in the study had type 2 diabetes mellitus and most of them were diabetic for over 10 years. Lack of insight and inability to follow optimal management is one of the risk factors included in this study. Smoking was known to have negative effect on wound healing and essentially doubles the complication rate for any surgery or wound healing intervention as compared to nonsmokers. Neuropathic and vascular changes in patient with diabetes put them at risk for developing chronic foot wounds after minor trauma or after pressure have caused a breakdown in the integrity of the skin. All diabetic foot ulcers are contaminated with a variety of organisms, but antibiotic treatments are usually unnecessary. When signs of a clinical infection are present and/or bone is exposed, osteomyelitis should be suspected. In these patients, aggressive surgical debridement, systemic antibiotics, and meticulous wound care regimens to restore the body's own bacterial barrier will often prevent amputation, the most serious complication of these wounds.

CONCLUSION:

The risk factors of diabetic foot ulcer in this study were poor glycemic control which includes higher levels of HbA1c, and fasting blood sugar levels, inappropriate footwear, lack of education and poor self-care. Likewise reduced sensation in lower limbs is a prominent predictor associated with foot ulceration in diabetic patients.

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