

ABSTRACT

Introduction

Diabetic foot disease (DFD) represents a challenging condition with significant burden for the patients and health systems. DFD is a common complication that may occur in all types of diabetes mellitus. It is multifactorial and includes various pathologies: diabetic foot ulceration, diabetic vasculopathy, diabetic neuropathy, diabetic foot infection, Charcot arthropathy.

Aim

This study aims to present the guidelines of the prevention and management of the diabetic foot in the United Kingdom.

Material & amp; Methods

Retrospective review of the literature and current guidelines for the management of diabetic foot.

Results

Multidisciplinary foot care service should consist of many specialists with skills in the following areas: Diabetology, Podiatry, Vascular Surgery, Orthopaedic Surgery, Microbiology, Orthotics, Casting, Interventional Radiology, Diabetes Specialist Nursing, Wound Care/Tissue Viability Nursing, Plastic Surgery, Psychological Services and Nutritional Services. Care should be provided within 24 hours of diagnosis/detection of diabetic foot problems in primary healthcare or hospitals.

Conclusions

The management of diabetic foot is challenging and remains a considerable public health problem with significant burden on patients and healthcare systems. Prevention programmes and basic foot care advice should be offered to every diabetic patient. Multidisciplinary team approach is of paramount importance and it can improve the quality of patients' care, according to current guidelines.

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Care within 24 hours

the person is already in hospital):

- Each hospital should have a care pathway for people with diabetic foot problems who need inpatient care.
- A named consultant should be accountable for the overall care of the person.
- Refer the person to the multidisciplinary foot care service within 24 hours of the initial examination of the person's feet. Transfer the responsibility of care to a consultant member of the multidisciplinary foot care service if a diabetic foot problem is the dominant clinical factor for inpatient care.
- The named consultant and the healthcare professionals from the existing team should remain accountable for the care of the person unless their care is transferred to the multidisciplinary foot care service.

- 1. National Institute for Health and Care Excellence (NICE) Guidelines
- 2. Update on management of diabetic foot ulcers, E. Everett, N. Mathioudakis, Ann N Y Acad Sci, 2018 Jan;1411(1):153-165. doi: 10.1111/nyas.13569
- Literature review on the management of diabetic foot ulcer, L. Yazdanpanah, M. Nasiri, S. Adarvishi, World J Diabetes, 2015 Feb 15;6(1):37-53. doi: 10.4239/wjd.v6.i1.37
- 4. Practical Guidelines on the prevention and management of diabetic

MANAGEMENT OF DIABETIC FOOT IN THE UNITED KINGDOM.

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INTRODUCTION

Care within 24 hours of a person with diabetic foot problems being admitted to hospital, or the detection of diabetic foot problems (if

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Care across all settings

- 1. Commissioners and service providers should ensure that the following are in place:
- A foot protection service for preventing diabetic foot problems, and for treating and managing diabetic foot problems in the community.
- A multidisciplinary foot care service for managing diabetic foot problems in hospital and in the community that cannot be managed by the foot protection service. This may also be known as an interdisciplinary foot care service.
- Robust protocols and clear local pathways for the continued and integrated care of people across all settings including emergency care and general practice. The protocols should set out the relationship between the foot protection service and the multidisciplinary foot care service.
- Regular reviews of treatment and patient outcomes, in line with the National Diabetes Foot Care Audit

2. The foot protection service should be led by a podiatrist with specialist training in diabetic foot problems, and should have access to healthcare professionals with skills in the following areas: diabetology, biomechanics and orthoses and wound care

3. The multidisciplinary foot care service should be led by a named healthcare professional, and consist of specialists with skills in the following areas: Diabetology, Podiatry, Diabetes specialist nursing, Vascular surgery, Microbiology, Orthopaedic surgery, Biomechanics and orthoses, Interventional radiology, Casting, Wound care.

4. The multidisciplinary foot care service should have access to rehabilitation services, plastic surgery, psychological services and nutritional services.

5. Healthcare professionals may need to discuss, agree and make special arrangements for disabled people and people who are housebound or living in care settings, to ensure equality of access to foot care assessments and treatments for people with diabetes.

6. Take into account any disabilities, including visual impairment, when planning and delivering care for people with diabetes.

Diabetic foot ulcer

- If a person has a diabetic foot ulcer, assess and document the size, depth and position of the ulcer.
- Use a standardised system to document the severity of the foot ulcer
- Do not use the Wagner classification system to assess the severity of a diabetic foot ulcer
- Offer 1 or more of the following as standard care for treating diabetic foot ulcers: Offloading
- Control of foot infection Control of ischaemia Wound debridement Wound dressings
- *debridement in hospital should only be done by healthcare professionals from the multidisciplinary foot care service and when treating diabetic foot ulcers, debridement in the community should only be done by healthcare professionals with the relevant training and skills

When deciding the frequency of follow-up take into account the overall health of the person with diabetes, how healing has progressed, and any deterioration.

Ensure the frequency of monitoringin the person's individualised treatment plan.

Charcot Arthropathy

Investigation:

- If a person with diabetes fractures their foot or ankle, it may progress to Charcot arthropathy.
- Suspect acute Charcot arthropathy if there is redness, warmth, swelling or deformity (in particular, when the skin is intact), especially in the presence of peripheral neuropathy or renal failure. Think about acute Charcot arthropathy even when deformity is not present or pain is not reported.
- To confirm the diagnosis of acute Charcot arthropathy, refer the person within 1 working day to the multidisciplinary foot care service for triage within 1 further working day. Offer non-weight-bearing treatment until definitive treatment can be started by the multidisciplinary foot care service.
- If acute Charcot arthropathy is suspected, arrange a weight-bearing X-ray of the affected foot and ankle. Consider an MRI if the X-ray is normal but Charcot arthropathy is still suspected.

Treatment:

- Offloading device (non-removable, if clinical or personal circumstances consider removable).
- Monitor treatment with clinical assessment including measuring foot-skin temperature difference and taking serial X-rays until the acute Charcot arthropathy resolves
- fPeople who have a foot deformity that may be the result of a previous Charcot arthropathy are at high risk of ulceration and should be cared for by the foot protection service.

Diabetic foot infection

Investigation

- If a diabetic foot infection is suspected and a wound is present, send a soft tissue or bone sample from the base of the debrided wound for microbiological examination. If this cannot be obtained, take a deep swab because it may provide useful information on the choice of antibiotic treatment.
- Consider an X-ray of the person's affected foot (or feet) to determine the extent of the diabetic foot problem.
- Think about osteomyelitis if the person with diabetes has a local infection, a deep foot wound or a chronic foot wound.
- Be aware that osteomyelitis may be present in a person with diabetes despite normal inflammatory markers, X-rays or probe-to-bone testing.
- If osteomyelitis is suspected in a person with diabetes but is not confirmed by initial X-ray, consider an MRI to confirm the diagnosis.

Treatment

- Start antibiotic treatment for people with suspected diabetic foot infection as soon as possible. Take samples for microbiological testing before, or as close as possible to, the start of antibiotic treatment.
- When choosing an antibiotic for people with a suspected diabetic foot infection take account of: the severity of diabetic foot infection, the risk of developing complications, previous microbiological results, previous antibiotic use, patient preferences.
- Follow protocols for selection of antibiotic
- Seek specialist advice when prescribing antibiotics for a suspected diabetic foot infection in children and young people under 18 years.
- Give oral antibiotics first line if the person can take oral medicines, and the severity of their condition does not require intravenous antibiotics.
- If intravenous antibiotics are given, review by 48 hours and consider switching to oral antibiotics if possible.
- Base antibiotic course length on the severity of the infection and a clinical assessment of response to treatment. Review the need for continued antibiotics regularly.
- Course length is based on clinical assessment: minimum of 7 days and up to 6 weeks for osteomyelitis (use oral antibiotics for prolonged treatment).

CONCLUSIONS

The management of diabetic foot is challenging and remains a considerable public health problem with significant burden on patients and healthcare systems. Prevention programmes and basic foot care advice should be offered to every diabetic patient. Multidisciplinary team approach is of

paramount importance and it can improve the quality of patients' care, according to current guidelines.