

# RIASE

REVISTA IBERO-AMERICANA DE SAÚDE E ENVELHECIMENTO  
REVISTA IBERO-AMERICANA DE SALUD Y ENVEJECIMIENTO

## **HAVING THE FOOT AT RISK: EXPERIENCE REPORT**

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## ABSTRACT

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Sensory changes due to neuropathy, namely those affecting the feet, make diabetic patients more prone to repeated trauma that tends to create clinically significant lesions, often with serious consequences and a considerable negative impact in well-being and quality of life. **Objective:** To understand the implications of diabetic foot ulcers on the daily life of patients. **Methods:** Experience Report resorting to informal interviews, application of the *Cardiff Wound Impact Schedule*. **Results:** Patients expressed particular concern in 4 areas: the future; tranquility in the face of disease; resources; and knowledge of risks. About the questionnaire data, the only life activity shown to be altered was mobility. **Conclusions:** There has been a concern to empower and inform the patient, which helps to better adapt to the transformations that will pass the course of their disease. It would be advantageous refer the patient to primary health care and nurse surveillance. **Descriptors:** Diabetes mellitus; diabetic foot; diabetic neuropathies; quality of life.

## INTRODUCTION

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Changes due to neuropathy in patients suffering from diabetes cause gradual alterations to foot sensitivity, making them more vulnerable to trauma and complications like ulcerations and foot and leg amputation. It is estimated that the risk of foot ulceration in people suffering from diabetes is between 15 and 25%<sup>(1)</sup>.

Identification and classification of high-risk patients, early treatment as well as individual, family and community education establish solid bases for preventing limb amputation in people suffering from this chronic disease<sup>(2)</sup>. However, these patients only go to health centres when they have serious wounds<sup>(3)</sup>.

All people with diabetes and their carers need to know about the disease and its implications in their daily lives to learn how to deal with different situations that may arise in the proper manner<sup>(4)</sup>.

It is a well-known fact that, in the majority of cases, amputation can be avoided through early diagnosis and respective referral. The longer the time it takes to diagnose diabetes, the greater the probability of developing wounds<sup>(5)</sup>.

In 2015, 415 million people were diagnosed with diabetes between the ages of 20 and 79. 193 million of them are not diagnosed and 318 million suffer from glucose intolerance. This

number is expected to reach 642 million before 2040<sup>(6)</sup>. In Portugal, in 2014, a reduction of 141 episodes of “pre-diabetes” were registered in comparison with 2013, following hospital release<sup>(7)</sup>.

Foot complications include sensory, motor and autonomous neuropathy, characterised by a series of alterations associated with vasculopathy of large, medium and small veins, which can develop into neuroischemic ulcers<sup>(8)</sup>. These conditions, when linked to a trauma, pose a higher risk of developing ulceration<sup>(9)</sup>.

## METHODS

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ESM (Experience Sampling Method)-based study, allowing detailed investigation of the patient. Data was collected between 16 October 2015 and 5 January 2016. An informal interview was conducted, existing clinical records were consulted and the Cardiff Wound Impact Scheme used. This document contains sociodemographic, well-being, physical symptoms, daily life and quality of life dimensions to demonstrate the impact of the chronic wound on people's daily lives. Treatment of the wound required close observation of the wound bed and surrounding skin and a T.I.M.E tool (T - non-viable tissue; I - Infection/inflammation; M - Moisture Imbalance; E - Edge of wound). Dated photographs were taken of the wound and clinical records were consulted to assess its evolution.

Respect was shown for ethical principles and confidentiality based on the Declaration of Helsinki in Medical Research Involving Human Subjects.

### *Case report*

A Portuguese single, unemployed woman aged 42. Personal background, Mellitus diabetes type I since 12 years of age, treated with insulin since 2012 due to inefficacy of oral anti-diabetic drugs. Family background: maternal grandmother and mother carriers of diabetes type II. She is followed by the Hospital's diabetology department and attends outpatient appointments. She is also supported, at her own initiative, by the “Diabetes Association” in Lisbon. She says she accepted her diagnosis and that she obtained all her knowledge on the disease whilst she was caring for her mother who was also diabetic.

She injects mixed insulin three times a day, 25 units at breakfast, 10 at lunch and 10 at dinner. She admits she does not adopt some safety measures. Her body mass index is 33.6, revealing level I obesity. About three years ago, a neuropathic wound appeared on the 3rd toe on her right foot, which became inflamed and infected, ending up with its amputation.

In 2014, following extraction of a corn from the sole of the foot, an ulcer developed that was difficult to heal. In October 2015, it shows signs of infection and suspected osteomyelitis. She uses an orthopaedic shoe recommended for people suffering from diabetes. She shows alterations in visual acuity and needs to use glasses. Right eye with cataracts, left eye with diabetic neuropathy under medical supervision.

Initial assessment of the wound on 16 October 2015, according to table 1:

**Table 1 - Assessment of the wound using the TIME tool**

| TIME dimensions                          | Observation/assessment  |
|--|---|
| Tissue (non-viable)                      | <ul style="list-style-type: none"> <li>• Presence of non-viable tissue on the wound bed (yellowish);</li> <li>• Regular edges;</li> <li>• No signs of hyperpigmentation;</li> <li>• Signs of maceration at the edges;</li> <li>• Oedema.</li> </ul>     |
| Infection/Inflammation (or colonisation) | <ul style="list-style-type: none"> <li>• Mild signs of inflammation and signs of osteomyelitis between the 2nd and 3rd toes of the left foot;</li> <li>• No pain. Mild fetid odour;</li> <li>• Humidity between the toes, pressure relieved.</li> </ul> |
| Balance moisture environment (exudated)  | <ul style="list-style-type: none"> <li>• Moderately covered dressing;</li> <li>• Moderate amount of serous exudate.</li> </ul>  |
| Stimulation of Epithelial edges          | <ul style="list-style-type: none"> <li>• Presence of keratosis, previously debrided.</li> </ul>   |

In the first assessment, the wound on the dorsum of her foot showed loca spreading to the sole and a large amount of hematic exudate had to be drained. Following debridement of fibrin present in the interior of the loca and removal of hyperkeratosis with a curette, the passage was reopened with the aid of tweezers. A simple dressing was put on the wound and a drain placed in the crack. Signs of osteomyelitis on the 2nd and 3rd toe of the left foot. She was medicated with Ciprofloxacin 500 mg and the wound was dressed every other day. On 28 October 2015, she was receptive and in no pain. The dressing was covered with a moderate amount of serous exudate. A drain was easily placed in the passage and Silver Alginate applied. On 2 November 2015, wound much better and less exudative. Two days later, the ulcer measured 0.3 x 0.3 cm, was less exudative and healing well. Places where the loca was inserted were smaller with even humid edges draining a small amount of serous exudate. No signs of inflammation. On 15 December, an epithelialized ulcer appeared on her left foot. She kept her routine weekly appointment with the nurse for removal of eventual keratosis.

Two years later, the neuropathic ulcer on the left foot healed and the patient overcame complications through admission to hospital in 2014 due to lack of metabolic control. Antibiotic treatment significantly improved signs of osteomyelitis on her 2nd and 3rd toes. On 4 January 2016, she complained of pain in the 1st toe of her right foot, which had already been treated for epithelialisation three years previously. A wound suggestive of a serous blister, already being drained, with granulation tissue, irregular edges and a moderate amount of hematic exudate, local redness and oedema. The sole of her left foot also showed keratosis that developed a small hematic blister.

## DATA ANALYSIS

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A qualitative data analysis showed the following categories and subcategories: "Concern with the future" with the following subcategories: "Complications of the present wound" and "Physical problems"; "Tranquillity in the face of the disease" with "Love in health care" and "Absence of symptoms" subcategories"; the "Resources" category and "Outpatients", "Health Centre" and "Diabetes Association" subcategories. The final category, "Knowledge off risks", enabled the experiential aspects of the disease to be explored through the "Symptoms" and "Care" subcategories.

Regarding quantitative data (Cardiff Wound Impact Scheme) on the well-being indicator, the patient is concerned with the wound and agrees to 80% of the issues. She shows her dismay with regard to treatment time, trust in healing, concern with her future and the respective effects of the wound when in contact with others. Regarding her physical symptoms and daily life, she said she found it slightly difficult to cope with 50% of the issues (mobility and daily chores at home) and she said that she could cope with others in moderation (footwear, costs, wound characteristics). Regarding her social life, 90% of the issues were not relevant as the patient says that her disease and the presence of the active ulcer did not prevent her from mixing with other people. She says she is only worried about "making the wound hurt" sometimes.

In a numeric scale from 0 to 10, where 10 is the best quality of life and 7 is very satisfied. Regarding her day-to-day activities and compromised organic systems, she says she herself needs to develop strategies to induce sleep as she suffers from insomnia. Her blood tests must be supervised to control serum iron concentrations.

The following nursing diagnoses can be seen in table 2:

Table 2 - Judgements, Diagnoses and interventions

| Diagnoses  | Nursing Interventions  | Expected Nursing Results                        |
|--|--|---|
| Oedema<br>16 October   | Assess the extent of the oedema.<br>Encourage rest and raising of the leg.   | Reduced and controlled oedema<br>2 November     |
| Obesity<br>16 October  | Identify the recommended weight for each individual.<br>Encourage the establishment of an adequate physical exercise routine.<br>Establish a commitment for a healthy eating plan.<br>Establish guidance for selecting nutritive food and liquids.<br>Encourage participation.<br>Monitor weight on a regular basis.<br>Identify situations that compromise food quality and physical exercise.<br>Forwarding to the nutritionist. | Gradual reduced and controlled obesity          |
| Risk of infection and peripheral neurovascular process compromised | Observe the wound.<br>Assess signs of infection.<br>Monitor infectious parameters.<br>Assess sensitivity of the affected foot.<br>Assess vascular compromise of the affected foot.<br>Promote the use of devices to relieve pressure areas on the foot. Promote the use of socks without seams or elastic made of absorbent material, preferably cotton.   | No infection and controlled risk<br>15 December |
| Diabetic wound present   | Dress the wound.<br>Monitor the wound.<br>Encourage adequate hydration and nutrition.  | Improved wound<br>15 December                   |
| Anxiety present<br>no adhesion to safety measures                  | Encourage communication.<br>Change thoughts.<br>Encourage self-control.<br>Reduce anxiety. Encourage people to make the necessary changes to their lifestyles.   | No anxiety and improved adhesion<br>15 December |
| Compromised mobility   | Assess muscle strength.<br>Guarantee safe mobilisation.<br>Assess the presence of pain/discomfort.   | Improved mobility<br>15 December                |

## FINAL CONSIDERATIONS

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Diabetes is a disease characterised by multiple metabolic disturbances making it essential to provide prevention programmes, information and knowledge for individuals/families affected by it.

Results obtained allowed reflexion on the disease, leading to more focused intervention. People's quality of life was not found to be compromised. It was found that the day-to-day activity affected the most is the attempt to maintain a safe environment. Patients have benefitted from care given to encourage them to be autonomous and ask questions and provide them with ways to overcome their difficulties. Even so, as this is considered a chronic disease and therefore complex, we think it might help to integrate the S.P. in a community care unit to be able to monitor the disease and reduce complications relating to her clinical situation. It is evident that the more information the person has, the better they will adapt to the changes they will go through and improve their daily lives.

Support groups should be established where these people can share the experiences they have had with their complex wounds. Promotion of continuous training of professionals is also to be considered to renew their knowledge and develop practical aid based on evidence shared by recent studies; encouragement to perform more research on this problem and further their knowledge on it. In view of the problem posed by diabetes, nurses promote quality care by obtaining knowledge based on scientific evidence on the subject to teach patients to be able to manage their health.

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