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Zero Callus Campaign: a strategy to prevent ulcers, amputations and death in people with Diabetes Mellitus

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Annually, approximately 18.6 million people are affected by a diabetes-related foot ulcer (DFU)[1], with a cumulative incidence of 5.65% for the first ulceration[2].

DFU develops gradually as a result of repetitive trauma in areas of higher pressure caused by deformities and biomechanical changes aggravated by motor neuropathy. These traumas go unnoticed because of the loss of protective plantar sensitivity, resulting from sensory neuropathy, and are aggravated by viscoelastic changes in the skin and its dryness caused by autonomic neuropathy. Consequently, callus formation in areas of higher pressure causes subcutaneous hemorrhage and eventual tissue rupture, leading to the development of the ulcer.

DFU damage can be severe early on, resulting in amputation rates of approximately 20%[3-5]. The situation is further aggravated by the high rates of re-amputations, which reach 19% in the first year and 37% in five years[6].

In Brazil, the impact of lower limb amputations is significant. In the last 13 years, the Unified Health System (SUS) registered 633,455 procedures, with Diabetes Mellitus (DM) being the main associated cause[7]. In the private health system, the numbers are also significant. A recent study[8] showed an incidence of amputations of 31.9% in five years, a higher percentage than that reported in the international literature, which ranges from 0.5 to 21.5%[9,10].

Amputations are associated with high mortality rates in five years, reaching 46% in cases of minor amputations and 56.6% in cases of major amputations[11]. Recent studies highlight that the five-year mortality rate for individuals with diabetes and foot complications is higher than the mortality rate from breast cancer[11].

The initial factor of this process, often overlooked, is the presenceof a callus that can silently evolve into ulcers, infections and amputations. Understanding that the pathophysiology of ulceration is directly associated with the presence of a callus, its formation on the feet of a person with DM can be the initial triggerof a devastating process[12].

This deformation constitutes a biomechanical marker of overload that signals the beginning of a progressive pathological process. Therefore, the presence of a callus on the feet of people with DM should be given the same clinical relevance as a breast tumor, being treated with the same rigor and preventive approach.

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Recognizing the urgency of preventing ulcers and complications in people with DM, the Zero Callus Campaign was developed with the support of the School of Nursing of the University of São Paulo (EEUSP), the Research Group on Enterostomal Therapy (GPET), the Complutense University of Madrid (UCM), the Brazilian Association of Enterostomal Therapy(SOBEST), the Brazilian Nursing Society in Dermatology(SOBENDE) and the Latin American Multidisciplinary Confederation of Wounds, Stomas and Incontinence (COMLHEI).

The objective of the campaign is to educate and alert health professionals about the importance of local care for callus as an initial strategy for preventing ulcers and premature death in these patients.

As part of the campaign, the recommendations contained in an infographic were developed through an extensive literature review; the first layout was presented and validated by a group of seven specialist and non-specialist nurses, who work directly in the care of people with DM, through the focus group strategy. The active participation of nursing assistants aimed to make the content more accessible and the design more attractive to read.

The infographic (which is already available in Portuguese and Spanish) begins by addressing mortality related to foot complications, comparing it to that caused by cancer and highlighting that most ulcers begin with a callus. It then explains what a callus is and warns about its progression to ulcers, amputation and death. Subsequently, it emphasizes the importance of prevention, with a focus on removing the callus through by debridement. Finally, in a call to action, it encourages participation in the campaign by adopting preventive measures (Figure 1).

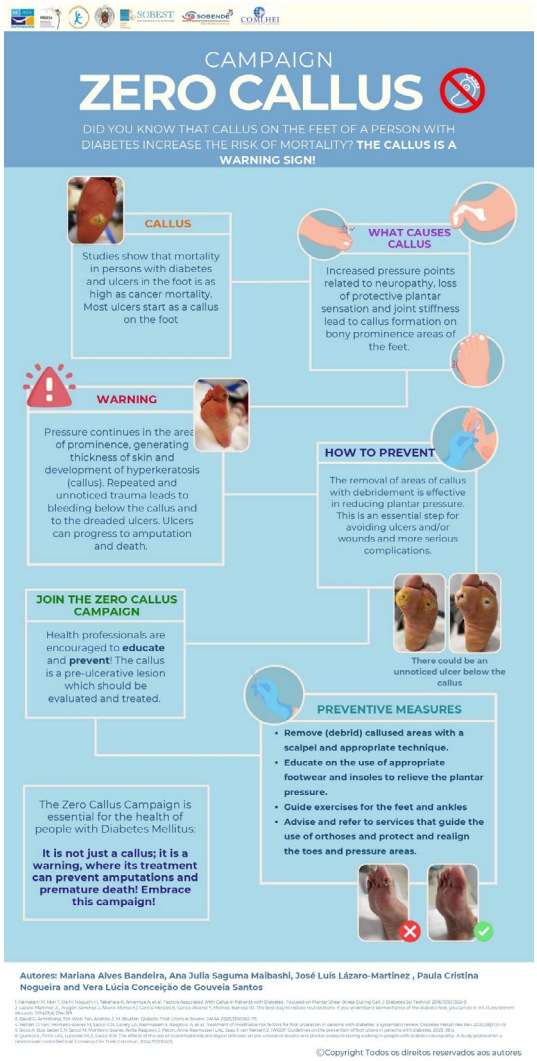

Figure 1. Infográfico da Campanha Calo Zero (English version).

With the information provided, it is expected that professionals who work with people with DM will develop or improve a different perspective on feet, leading to the implementation of preventive measures or early intervention as soon as a callus is detected.

In the context of Brazil and Latin America, the campaign is of great importance, because of the lack of/delay that patients face in accessing referral services and longer waiting times for revascularization, resulting in more severe ulcers and earlier amputations.

The campaign is mainly focused on primary health care professionals, aiming to expand their knowledge and skills to provide better quality preventive care, aiming at better results for the patient and for the scenario of amputations and mortality in the country and in Latin America.

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