

Interdisciplinary assistance in the wound healing process in barbatimão: Case report

Assistência interdisciplinar no processo cicatricial de feridas em uso de barbatimão: Relato de caso

Asistencia interdisciplinaria en el proceso de cicatrización de heridas en barbatimão: Relato de caso

RESUMO

Objetivo: O objetivo deste estudo foi descrever um caso de tratamento de uma úlcera do pé diabético com *S. adstringens* com uma formulação magistral. Método: Trata-se de um relato de experiência sobre atendimento a uma paciente com úlcera do pé diabético submetida a tratamento com solução de barbatimão a 20% e fibra de alginato durante os meses de fevereiro a abril de 2021. Resultado: Na primeira consulta de enfermagem, foi realizado o histórico de enfermagem, o diagnóstico de enfermagem, "Integridade tissular prejudicada evidenciada por exposição do tecido abaixo da epiderme (úlcera do pé diabético em hálux esquerdo) relacionada a nível inadequado de glicose no sangue (diabetes mellitus tipo 1)". Posteriormente foram descritas as intervenções de enfermagem para tal diagnóstico, seguido da implementação e avaliação das intervenções. Conclusão: Essa experiência permitiu ampliar os horizontes de aplicabilidade do barbatimão do tratamento de feridas também para casos de hipergranulação.

DESCRIPTORES: Feridas; Fitoterapia; Barbatimão; Cicatrização; Multidisciplinar.

ABSTRACT

Objective: The aim of this study was to describe a case of treatment of a diabetic foot ulcer with *S. adstringens* with a masterful formulation. Method: This is an experience report on the care of a patient with diabetic foot ulcer who underwent treatment with 20% barbatimão solution and alginate fiber during the months of February to April 2021. Results: In the first consultation of nursing history, the nursing history was carried out, with the data obtained, and the nursing diagnosis established was Impaired tissue integrity evidenced by exposure of tissue below the epidermis (diabetic foot ulcer in the left hallux) related to inadequate blood glucose level (type 1 diabetes mellitus). Subsequently, the nursing interventions for this diagnosis were described, followed by the implementation and evaluation of the interventions. Conclusion: This experience allowed expanding the horizons of applicability of barbatimão in the treatment of wounds also for cases of hypergranulation.

DESCRIPTORS: Wounds; Phytotherapy; Barbatimão; Healing; Multidisciplinary.

RESUMEN

Objetivo: El objetivo de este estudio fue describir un caso de tratamiento de una úlcera de pie diabético con *S. adstringens* con una formulación magistral. Método: Se trata de un relato de experiencia sobre el cuidado de un paciente con úlcera de pie diabético que realizó tratamiento con solución de barbatimão al 20% y fibra de alginato durante los meses de febrero a abril de 2021. Resultados: En la primera consulta de historia de enfermería, la historia de enfermería con los datos obtenidos, se estableció el diagnóstico de enfermería Deterioro de la integridad tisular evidenciado por exposición de tejido debajo de la epidermis (úlcera de pie diabético en hallux izquierdo) relacionado con nivel inadecuado de glucosa en sangre (diabetes mellitus tipo 1). Posteriormente, se describieron las intervenciones de enfermería para este diagnóstico, seguido de la implementación y evaluación de las intervenciones. Conclusión: Esta experiencia permitió ampliar los horizontes de aplicabilidad de barbatimão en el tratamiento de heridas también para casos de hipergranulación.

DESCRIPTORES: Heridas; Fitoterapia; Barbatimão; Cicatrización; Multidisciplinario.

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INTRODUÇÃO

Stryphnodendron adstringens, popularly known as barbatimão, is a medicinal plant with an important ethnopharmacological use due to its traditionality. It has been administered as a medicinal tea, topically for different clinical conditions, such as gynecological conditions^{1,2}, urinary¹ and inflammations¹, highlighting the applications in skin lesions³ and ulcerous wounds.² How to use it involves decocting 3 g (1 tablespoon) of the bark in 1 liter of water, with application of compresses to the affected site 2 to 3 times a day aiming at the treatment of lesions, as a healing agent and topical antiseptic on the skin and oral and genital mucous membranes.⁴

A phase II clinical study was performed aiming at healing pressure injuries 5 with ointment containing 3% *S. adstringens* phenolic phytocomplex. The authors performed the treatment for six months, with weekly reassessments of the lesions, and concluded that there was a 30% reduction in the initial area of the lesions after the first week of treatment, with 100% healing of the lesions during the treatment period, and 70% of the lesions healed within two months. Currently there is only one product registered with ANVISA based on *S. adstringens*, being indicated as a healing agent for various types of lesions. There is also the possibility of prescribing a masterful product, adapting vehicles and doses, individualizing the treatment according to the patient's need.

In view of the scarcity of clinical studies in human beings that reiterate the popularly known properties of barbatimão, it is justified to carry out research on the subject. Therefore, the aim of this study was to describe a case of treatment of a diabetic foot ulcer with *S. adstringens* with a masterful formulation.

METHOD

This is an experience report on the care of a patient with diabetic foot ulcer who underwent treatment with a 20% barbatimão solution and alginate fiber during the months of February to April 2021.

The consultations were performed by a nurse specialist in dermatology and clinical pediatrics once a week, following the steps proposed by the nursing process. The consultations were carried out based on the history, followed by the nursing diagnosis, the planning and implementation of care, concluding with the nursing assessment.⁶ In addition, it is noteworthy that the patient was already under assistance, on an outpatient basis, by the medical team responsible for the control of comorbidities and received care aimed at pharmaceutical care.

Data collection was performed through anamnesis and physical examination. Clinical evaluation of lesion size was performed using the ImageJ® program, in the first and last consultations.⁷

Data analysis was performed based on the patient's evolution and based on the literature on the subject and the presen-

tation of results was performed according to the stages of the nursing process, following the guidelines for standardization of language according to the taxonomies proposed by NANDA⁸, NIC⁹ and NOC.¹⁰

As it is an experience report, the present study does not require approval by the Research Ethics Committee (REC). The information is presented in such a way as to make it impossible to identify the patient and an informed consent form was obtained, following the recommendations of the National Health Council Resolution No. 466, of December 12, 2012.¹¹

RESULTS - Experience report**Nursing History**

The first nursing consultation was held on February 26, 2021. On that day, the nursing history was performed, with the data obtained as follows:

Anamnesis: Female patient, 47 years old, with a medical diagnosis of type 1 diabetes mellitus, massage therapist. She sought care at a private nursing office due to a lesion in her left hallux. He reported that because of his profession, he remained standing for many hours in a row, and the injury appeared after using shoes with a hard surface in June 2020. He had no pain complaints and walked without assistance. The patient reported continuous use of cilostazol (100 mg once a day, in the morning), flavonid (diosmin 450 mg with hesperidin 50 mg once daily

in the morning), pregabalin (75 mg once daily in the evening), venalot (coumarin 15 g and troxerutin 90 mg once daily in the evening), NPH insulin (60 units in the morning and 20 units at night) and regular insulin (10 units in the morning, 12 units at lunch and 12 units at night).

Physical exam: Pedal pulses were preserved in both lower limbs, with preserved capillary filling. He had a small extent diabetic foot ulcer (area measured at 3 cm²) in the left hallux, with hypergranulation tissue and bed liquefaction necrosis. There was hyperkeratosis at the edges, with drainage of purulent exudate in a small amount. There was no foul odor, heat, redness or swelling. The perilesional skin was hydrated and the patient did not report itching on the lesion or on the edges.

Nursing Diagnosis

The priority nursing diagnosis for this patient, established in the first nursing consultation performed, was: Impaired tissue integrity evidenced by tissue exposure below the epidermis (diabetic foot ulcer in the left hallux) related to inadequate blood glucose level (type 1 diabetes mellitus).

Nursing Planning

The nursing planning stage was carried out by establishing the results that were desired to be achieved in the case in question and the deadlines for reaching them, as well as the interventions that would be carried out to achieve the proposed health objectives. Table 1 presents the results and planned nursing interventions.

Nursing Implementation

The interventions prescribed in the planning stage were carried out as detailed below. The protocol with the applications of the described topical coverings was maintained for 60 days.

02/26/2021 | 1st nursing consultation

Guidelines on foot care. These in-

cluded: choosing appropriate footwear; need for intermittent rest of the lower limbs during the workday; daily inspection of the feet for new lesions, redness, swelling, heat, dryness, maceration, tenderness; advice on self-care measures, as well as on possible sources of foot injury.

Injury care: Irrigation with 0.9% saline solution in a 20 ml syringe for cleaning; Application of photodynamic therapy. For this, the 0.01% methylene blue photosensitizer was applied in a master pharmacy on the lesion. Then, a low power laser was used in red light, with application of 9 joules on the lesion. Application of calcium alginate fiber to the wound bed, with occlusion with dry gauze and secondary coverage with a crepe bandage. At the end of the consultation, the nursing care plan provided to the patient contained the following recommendations, in addition to the previous guidelines already presented: Perform the dressing daily at home after rigorous hand hygiene (with soap and water or gel alcohol) using: 0.9% saline solution for cleaning the

lesion; Application of 0.9% physiological solution with 20% Barbatimão and 2% Calendula in soaked gauze kept on the wound for 7 to 10 minutes. This formulation was prescribed by the nurse for the master pharmacy, along with the observation that it was filled in a spray bottle to facilitate its application and reduce the possibility of product contamination. Coverage with calcium alginate fiber on the wound bed with occlusion with dry gauze and secondary coverage with crepe bandage.

Nursing Assessment

03/02/2021 | Beginning of the use of 20% barbatimão and 2% calendula solution at home by the patient. 03/05/2021 | Return to the nursing office for the 1st reassessment. The physical examination on that day showed some reduction in hypergranulation tissue and the presence of a small amount of serous exudate. 03/12/2021 | Return to the nursing office for the 2nd reassessment. The hypergranulation and liquefaction necrosis tissues had reduced more compared to the previous visit. In addition to previous

Table 1. Nursing outcomes and planned interventions. Rio de Janeiro, 2022.

| Expected results | Indicators | Result target | Planned interventions | Planned activities |
|---|----------------------|--|-----------------------|--|
| Tissue integrity: skin and mucous membranes | Tissue integrity | Evolve from "very committed" to "not committed" within 60 days | Injury care | Clean with saline solution; Educate the patient about wound care procedures; Monitor lesion characteristics, including drainage, color, size, and odor; Apply appropriate dressing. |
| | Necrosis | Evolve from "substantial" to "none" within 60 days | | |
| Wound healing: second intention | Decreased wound size | Evolve from "moderate" to "extensive" in up to 60 days | Teaching: Foot care | Recommend daily inspection of the feet; Advise on: adequate footwear; inspection, hygiene, drying and daily hydration of the feet with the application of emollients; need for lower limb rest |
| | Purulent drainage | Evolve from "moderate" to "none" within 60 days | | |

Source: Survey data, 2022

nursing care, conservative instrumental debridement was performed, with the aid of tweezers and scalpel, aiming at removing the hyperkeratosis present at the edges of the lesion. The care protocol was maintained at home by the patient, as well as in the office, with weekly nursing consultations. In the meetings after 03/12/2021, conservative instrumental debridement was not necessary, due to the already achieved reduction of the hyperkeratosis tissue of the edges. 03/19/2021 | Return to the nursing office for the 3rd reassessment. There was a great reduction in the hypergranulation tissue, and the procedure was maintained. 03/26/2021 | Return to the nursing office for the 4th reassessment. The physical examination allowed observing the absence of hypergranulation. At the end of 60 days of treatment, complete healing of the lesion was achieved.

DISCUSSION

It is known that successful wound healing is the result of the articulation of several aspects, which must be considered by the health team involved in the provision of care. Among these aspects, we can highlight the importance of interdisciplinarity, the need to apply scientifically based protocols, the control of comorbidities or living conditions that represent predisposing factors for complications in the repair, as well as the patient's participation in their own care.

In this study, it can be seen that this articulation cooperated to achieve planned results in the context of the nursing process for a patient who had been living with a diabetic lesion for eight months, without satisfactory evolution. It can be said that, among other factors, the success obtained was possible due to the use of phytotherapy in the care protocol.

This is because the 20% barbatimão and 2% calendula solution applied to the lesion helped to reduce the purulent exudate, as well as to control hypergranulation. Calendula officinalis is part of the Asteraceae (Compositae) family and

has reported medicinal properties: healing, anti-inflammatory and antiseptic actions, preventing infections in wounds and abrasions and dermatitis.¹²

Although two actives were used in this solution (barbatimão and calendula), res-

in studies previously published on the subject^{13,14}, which basically used the 1% concentration. In addition, a literature review published in 2014 on calendula applied to tissue repair did not point to specific actions in hypergranulation tissues, such as those evidenced here.¹²

Sabe-se que, na ciência, toda resposta, como regra, gera mais perguntas¹⁵. Daí a caracterização dos resultados aqui encontrados como significativamente estimulantes, tendo em vista que abrem ainda mais campos de pesquisas a serem desbravados no contexto da fitoterapia no Brasil.

Despite this, clinical trials are often feasible only with industrial support, due to high costs¹⁶, which makes the implementation of this policy a major challenge. Few researches have been developed nowadays to elucidate the pharmacokinetic and pharmacodynamic characteristics of herbal medicines.

An ethnopharmacological bibliographic study published in 2018¹⁷ on the use of barbatimão and copaíba for the treatment of wounds pointed out that 5 pre-clinical studies were published in the last twelve years on the use of barbatimão in skin disorders and only 1 study, published in 2010, used barbatimão in humans to treat pressure injuries.⁵ In addition, *S. adstringens* 18 is part of the national list of medicinal plants of interest to SUS (RENISUS). All these aspects reiterate the relevance of the theme within the scope of national scientific research.

As research limitations, it can be said that the type of study conducted (experience report) prevents the extrapolation of results to other contexts or populations. However, in view of the scarcity of publications on the subject, initial studies such as the one presented here are justified as they aim to enhance discussions and broaden research horizons.

CONCLUSION

The interdisciplinary care process, supported by the nursing process allied

The interdisciplinary care process, supported by the nursing process allied with pharmaceutical care, allowed achieving the expected results of complete healing of the lesion in sixty days, which had already been under previous treatment for eight months, without satisfactory results.

possibility for the outcomes achieved is primarily attributed to barbatimão due to some issues. Initially, the fact that it was present in the solution in a concentration significantly higher than that of marigold. As well, the concentration used was superior even to those commonly used

with pharmaceutical care, allowed achieving the expected results of complete healing of the lesion in sixty days, which had already been under previous treatment for eight months, without satisfactory results.

This experience allowed expanding the horizons of applicability of barbatimão in the treatment of wounds also for cases of hypergranulation. The findings evidenced here collaborate to minimize the scarcity of publications on the sub-

ject, as well as allow recommending the development of new studies that aim to detail the pharmacokinetic and pharmacodynamic mechanisms involved in tissue repair of diabetic foot ulcers treated with herbal medicines.

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