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Case study: action of hyaluronic acid and natural assets in wound healing - Pharmacure®

Estudio de caso: acción de ácido hialurónico y activos naturales en la curación de heridas - Pharmacure®

Estudo de caso: ação do ácido hialurônico e ativos naturais na cicatrização de feridas – Pharmacure®

ABSTRACT

Studies demonstrate promising effects of Phytotherapeutic drugs for the treatment of wounds of different etiologies. **OBJECTIVES:** To evaluate the efficacy and benefits of using Pharmacure®, containing natural and phytotherapeutic drugs in the Erysipelas treatment. **METHODS:** A case study of a 57-year-old woman with an extensive lesion arising from Erysipelas. Observations, measurements and photographic records were made weekly. Dressings were applied daily with cleaning and application of the Pharmacure® lotion. **RESULTS:** After 35 days, skin repair of the lesion, faster and positive wound healing evolution, approximation of the edges and better alignment were observed. The lesion healed completely in 122 days. **DISCUSSION:** The phytotherapeutic constituents of the lotion associated with hyaluronic acid are evidenced in the literature given their antimicrobial, anti-inflammatory and healing potential. The nurse's interventions for the successful treatment of wounds are highlighted. **CONCLUSION:** Pharmacure® presented a promising coverage for tissue repair in patients with Erysipelas.

DESCRIPTORS: Wound Healing; Phytotherapeutic Drugs; Plants, Medicinal; Erysipelas.

RESUMEN

Los estudios demuestran efectos prometedores de los medicamentos medicinales para el tratamiento de heridas de diferentes etiologías. **OBJETIVOS:** Evaluar la eficacia y los beneficios del uso de Pharmacure®, que contiene medicamentos naturales y herbales en el tratamiento de la Erisipela. **MÉTODOS:** Se realizó un estudio de caso de una mujer de 57 años con una lesión extensa debida a Erisipela. Se realizaron observaciones, mediciones y registros fotográficos semanalmente. Los apósitos se aplicaron diariamente con limpieza y aplicación de la loción Pharmacure®. **RESULTADOS:** Después de 35 días, se observó reparación de la piel por la lesión, evolución de curación más rápida y positiva, aproximación de los bordes y mejor alineación. La lesión se curó completamente en 122 días. **DISCUSIÓN:** los componentes fitoterapéuticos de la loción asociada con el ácido hialurónico se evidencian en la literatura debido a su potencial antimicrobiano, antiinflamatorio y curativo. Se destacan las intervenciones de la enfermera para el tratamiento exitoso de las heridas. **CONCLUSIÓN:** Pharmacure® se presentó como una cobertura prometedora para la reparación de tejidos en pacientes con Erisipela.

DESCRIPTORES: Cicatrización de Heridas; Medicamentos Fitoterápicos; Plantas medicinales; Erisipela.

RESUMO

Estudos demonstram efeitos promissores dos fitoterápicos para o tratamento de feridas de diversas etiologias. **OBJETIVOS:** Avaliar a eficácia e benefícios do uso de Pharmacure®, contendo ativos naturais e fitoterápicos no tratamento da Erisipela. **MÉTODOS:** Realizou-se um estudo de caso de uma mulher de 57 anos que apresentava uma lesão extensa decorrente de Erisipela. Realizou-se observações, medições e registros fotográficos semanalmente. Os curativos eram realizados diariamente com limpeza e aplicação da loção Pharmacure®. **RESULTADOS:** Após 35 dias observou-se reparação cutânea da lesão, evolução cicatricial mais rápida e positiva, aproximações das bordas e melhor alinhamento das mesmas. A lesão cicatrizou completamente em 122 dias. **DISCUSSÃO:** Os fitoterápicos constituintes da loção associados ao ácido hialurônico são evidenciados na literatura dado seu potencial antimicrobianos, anti-inflamatórios e cicatrizante. Destaca-se as intervenções do enfermeiro para o sucesso do tratamento de feridas. **CONCLUSÃO:** O Pharmacure® apresentou-se como cobertura promissora na reparação tecidual de pacientes com Erisipela.

DESCRIPTORIOS: Cicatrização, Medicamentos fitoterápicos, Plantas medicinais; Erisipela.

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INTRODUCTION

Over the centuries, products of plant origin have formed the basis for the treatment of various diseases, either traditionally, due to the knowledge of the properties of a given plant, which is passed from generation to generation, or by the use of plant species, as a source of active molecules.¹

Popular observations on the use and efficacy of medicinal plants contribute significantly to the dissemination of the therapeutic virtues of vegetables, frequently prescribed, for the medicinal results they produce, despite not having their chemical constituents known. Thus, users of medicinal plants from all over the world keep the practice of the consumption of herbal medicines in vogue, making valid therapeutic information that has been accumulated for centuries.²

Brazil is internationally described as having the largest diversified forest reserve on the planet. The potential of this flora for use in medicine has been highlighted in the scientific community interested in discovering new particles, matter, elements that can stimulate surgical repair. However, there is still incipient work with scientifically structured methodology. Most of the publications are empirical essays based on popular saying.³

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In this sense, it is considered to remember that the Brazilian Ministry of Health,

in recent years, seeks to encourage the insertion of complementary care practices in the official health system. The implementation of the National Policy for Medicinal and Herbal Plants (Política Nacional de Plantas Medicinais e Fitoterápicos - PNPMF)⁴ and the National Policy for Integrative and Complementary Practices (Política Nacional de Práticas Integrativas e Complementares - PNPIC)⁵ stand out, both in 2006, and aim to stimulate access to complementary practices and medicinal plants, for health care, effectively and safely.

The healing action of wounds promoted by natural actives is widely discussed in the literature. Its use has been mentioned since prehistory, when plants and plant extracts were used, in the form of poultices or ingestion in order to stop bleeding and promote healing.⁶ Several phytoterapics are referred for the treatment of complex wounds, based on their healing potentials such as Melaleuca (*Melaleuca alternifolia*), Aloe vera and Papain.

Melaleuca oil is reported to be a powerful antifungal, anti-inflammatory, balsamic and immune stimulant.⁷ For its part, Aloe vera is widely known for its potential to stimulate tissue growth and cell regeneration⁸ and Papain, a proteolytic enzyme extracted from papaya (*Carica Papaya*) is evidenced by its ability to remove devitalized tissue, enzymatic debridement, autolytic, antimicrobial, anti-inflammatory and uniform healing.⁹ These compounds can be combined with other elements in order to accelerate the healing process of these wounds, there are covers and topical agents containing hyaluronic acid.¹⁰

The treatment of wounds, such as those resulting from Bullous Erysipelas, is a challenge, given its high rate of recurrence and the gaps resulting from the complexity of the condition and nursing care.¹¹ Thus, the literature points out that research on tissue repair is highly dynamic and growing, due

to the current need to search for new relevant, effective, safe, low-cost technologies, with emphasis on herbal medicines.¹² In this sense, the objective of this study was to evaluate the efficacy and benefits of using natural actives in the treatment of Bullous Erysipelas, Pharmacure®, with a formula containing Hyaluronic acid, Melaleuca, Aloe vera, Papain 10%, in the treatment of acute and chronic wounds.

METHODS

This is a descriptive, case study type study. This was carried out at the Medical Specialties Center in Magé, RJ, from August 16th to December 4th, 2019. Data collection from the clinical course of the lesion was performed through the records in the patient's chart, observation and weekly measurements of the injury, as well as by photographic record. The patient signed the informed consent form, informed as determined by Resolution 196/96 of the Health Ministry.

The patient in question is female, 57 years old, obese, hypertensive, with extensive RLL lesion (Right Lower Limb) and dorsum of the right foot, with deep involvement of the skin layers, necrosis and purulent exudate. Lesion measuring about 28cm x 20cm, instead 16cm, irregular edges, necrosis due to colliquation, serous-exudate in large quantities. Swollen perilesional skin, showing phlogistic signs.

After the first evaluation, the patient began to be monitored by the program team, verified the presence of necrotic tissue and the need for instrumental debridement. Daily cleaning with 0.9% saline and daily application of a thin layer of Pharmacure® cream to the lesion bed was started. The daily dressing changes were carried out twice a day, due to the volume of exudate.

After the procedure, the patient remained in the care of the medical clinic, re-

Figure 1- Photographic record of the evolution of the treatment of the lesion in MID due to Erysipelas on the 1st, 35th and 68th day



Source: Author's photo

Figure 2- Photographic record of the MID lesion treatment resulting from Erysipelas at the 122nd day



Source: Author's photo

ceiving antibiotic therapy (initially being used Oxacillin EV 4/4h, Ceftriaxone 1 G EV 12/12h) and clinical support (elevated headboard, 0.9% saline infusion and glycoside 10%), in addition to intensive care with the extensive wound. Among the control and treatment measures, nutritional interventions, control of microbial load and biofilm, control of symptoms and concomitant diseases and use of appropriate dressings can be related. She remained hospitalized for 122 days, after complete healing of the lesion, exams optimization and clinical improvement.

RESULTS

After 35 days of treatment with Pharmacure®, skin repair of the lesion was observed, faster and positive healing evolution during treatment, approximation of the edges and better alignment of them observed on the 68th day of treatment (Figure 1). The lesion healed completely in 122 days of using the product (Figure 2).

It was observed that the mechanisms of action and use of Pharmacure® contributed significantly to the management of the lesion, as it speeds up the healing process, as long as the necessary cellular and molecular interactions are allowed; that is, by removing, as much as possible, sloughs and necrotic tissue, which occurred in the case. Another important aspect observed was the ease of use of the product. Its easy application and removal in thin layers greatly contribute to the assistance, professional or not, provided to the patient, relevant aspects in the context of adherence to treatment.

DISCUSSION

Bullous Erysipelas is a cutaneous pathology of essentially streptococcal etiology and frequent recurrence episodes. It is associated with other comorbidities such as diabetes and obesity. It is characterized by marked involvement of the lymphatic plexus, with the formation of erythematous plaques, jointly with edema and pain, which causes a general malaise in the patient.¹¹

The treatment of this pathology is considered complex, carried out essentially with antibiotics. However, it is observed that the microorganisms have shown resistance, which makes the therapy laborious, with evolution to the chronicity, relapses, and generalized worsening of the individual's health and quality of life.¹¹ For these reasons, studies point to the need to discover new drugs that are safe, effective and economically viable.¹²

The biocomposites and phytotherapies studied for the treatment of lesions resulting from erysipelas must have chemical components with regenerative, anti-inflammatory and antimicrobial action.⁸ In this sense, the use of the constituent compounds of the Pharmacure® lotion are reported in the literature in view of their potential healing effect.

Previous studies have demonstrated the effectiveness of using hyaluronic acid to accelerate tissue healing, fibrosis, significantly improve angiogenesis, in addition to having anti-inflammatory effects.^{13, 14} In Nyhman's study¹⁰ it was pointed out that hyaluronic acid has a high potential for reepithelization and high protein regulation in deep wounds.

Similarly, studies highlight the healing properties of Aloe vera, due to its ability to promote the proliferation of elements active in the healing process such as fibroblasts, hyaluronic acid and hydroxyproline.¹⁵ In turn, Melaleuca oil has been shown to be an important adjuvant in the treatment of wounds, given its antimicrobial and anti-inflammatory efficacy.⁷ Regarding papain, in the study by Rodrigues¹⁶ it was found that in venous ulcerative lesions treated with 2% papain gel there was a significant reduction in the injured areas, in addition to a reduction in exudate and an increase in granulation tissue.

These results corroborate the clinical findings in the present study, with regard to the significant improvement of the lesion by Erysipelas after the continuous use of the evaluated formulation. Thus, these results suggest a positive perspective for the treatment of chronic wounds such as those caused by Erysipelas, aiming at the quality of life and survival of the affected patient.

For this reason, in this case study, nursing interventions were worked with the patient, which helped her to improve her condition. The nurse needs to be trained to apply his theoretical, technical, practical and scientific knowledge, as it is unlikely that the professional will prevent or treat only Erysipelas. After all, it is an opportunistic disease.

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The nurse must never forget that information, "educational practices", promotion of quality of life and health are the essence of care. The nurse must inform, in confirmed cases of Erysipelas, the frequency with which it appears. And, if it recurs, the secondary infection should have priority, being immediately eliminated.¹⁷

Among competences and attributions, it is up to the nurse "to make dressings, coordinate and supervise the nursing team in the prevention and care of wounds". He can also prescribe and suggest "medicines / coverings" used as herbal medicines for therapy and treatment of wounds. Create institutional protocols in order to prevent. It can also be improved through new techniques and technologies aimed at accelerating the healing process, in what is most modern in the world in coverings and dressings; low intensity laser, "negative pressure" therapy, herbal medicine, clay therapy, hyperbaric oxygen therapy, "ozone therapy". It is also important to monitor the wound evolution process through some record, such as photography, as long as the patient authorizes it.¹⁸

Situating yourself in the treatment of Erysipelas by nurses and a multidisciplinary team is fundamental in the result and predicts the use of antibiotics in preventive action. The best guidelines are related to the cleaning of the wound site, which is the main gateway, and allows to avoid pathologies such as obesity, diabetes, among others.¹⁹

In view of the above about the challenges faced by professionals involved in the treatment of wounds, it is considered that the interventions performed in this case report favored a significant improvement in Erysipelas's condition. The use of the Pharmacure® formulation can be considered a promising cover for maintaining the ideal humid environment, debridement effect, cleaning and organization of the wound bed, even in complex lesions.

CONCLUSION

Brazil occupies an enviable posture from the point of view of biodiversity,

it has the unique opportunity to guarantee sovereignty and magnitude with the use of herbal medicines and medicinal plants in primary health care in a sustainable manner. Considering the high cost of the treatment of chronic wounds offered in the current market, it is necessary to create new products accessible to the carrier population. In this way, it became promising to invest in research with natural products due to its easy acquisition, effectiveness, safety and low cost.

It is noteworthy that the implementation of dressings involving the use of Pharmacure® proved to be an efficient

therapeutic alternative in accelerating the healing of lesions in complex cases, and its availability to patients with wounds of this nature is interesting. In addition, it can also be said that it has anti-inflammatory, antioxidant, antiallergic, antinociceptive properties, in addition to positive effects in the treatment of Bullous Erysipelas, optimization of angiogenesis, which also assists in reducing inflammation.

Therefore, it is understood that Pharmacure® becomes a promising alternative when compared to conventional therapeutic methods due to its high availability in nature, a safety profile and a wide

proven mechanism of action. However, it is necessary to emphasize, as a prelude, the preparation, dissemination and training of professionals so that they can guide and educate society on the subject and complexity for the correct choice of coverage and the healing process of an Erysipelas wound.

In addition, through this article, the knowledge of many health professionals, and even society, regarding the treatment of Erysipelas can be increased. Especially the relevance of studying the coverings and phytotherapies, the latter being a subject in development, nevertheless it can be used in a responsible and safe way. ■

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