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RESEARCH

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CLINICAL AND EPIDEMIOLOGICAL ASPECTS AND ACCEPTABILITY OF LARVAL THERAPY IN PATIENTS WITH CHRONIC WOUNDS

*Aspectos clínicos e epidemiológicos e aceitabilidade da terapia larval em pacientes com feridas crônicas**Aspectos clínicos y epidemiológicos y aceptabilidad de la terapia larval en pacientes con heridas crónicas*

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ABSTRACT

Objectives: to evaluate the epidemiological and clinical profile of patients with wounds and acceptability to Larval Therapy (LT). **Method:** followed 15 patients with chronic wounds and recorded in clinical records. **Results:** patients didn't know LT. Ages varied (45 to 73 y.o.), were black (46.66%), white (26.66%) and yellow (20.00%), predominantly women (73.33%). They had Elementary (53.33%), High (20.00%) and Higher education (26.60%). 60% lived in Rio de Janeiro; Wounds (mean age of 6 years; mean area of 9.4 cm²) in the distal third of the legs (53.00%) and feet (47.00%), with vascular origin (40.88%), pressure (31.69%), diabetic (16.66%) and infectious ulcers (10.77%). Patients had three (20.00%), two (20.00%) or one wound (60.00%), with necrosis (80.00%), infection (37.60%), granulation (50.30%), epithelialization (15.00%), pain (54.00%) and locomotion difficulty (47.00%). Venous insufficiency as the most observed pathological antecedent. Acceptability for LT was 93.33%. **Conclusion:** LT is an alternative to better quality of life.

DESCRIPTORS: Biological debridement; Comorbidities; Elderly.

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RESUMO

Objetivo: avaliar o perfil epidemiológico e clínico de pacientes com feridas e a aceitabilidade à Terapia Larval (TL). **Método:** acompanhados 15 pacientes com feridas crônicas e registrados em fichas clínicas. **Resultados:** pacientes não conheciam a TL. Idades variaram (45 a 73), pretos (46,66%), brancos (26,66%) e pardos (20,00%), predominantemente mulheres (73,33%). Tinham ensino fundamental (53,33%), médio (20,00%) e superior (26,6%) completos. 60% residiam no RJ; Lesões, (idade média de 6 anos e área média de 9,4 cm²) no terço distal das pernas (53,00%) e nos pés (47,00%), com origem vascular (40,88%), úlceras por pressão (31,69%), diabéticas (16,66%) e infecciosa (10,77%). Pacientes apresentavam três (20,00%), duas (20,00%) ou uma lesão (60,00%), com necrose (80,00%), infecção (37,60%), granulação (50,30%), epitelização (15,00%), dor (54,0%) e dificuldade de locomoção (47,00%). Insuficiência venosa como antecedente patológico mais observado. A aceitabilidade para TL foi 93,33%. **Conclusão:** TL é alternativa para melhor qualidade de vida.

DESCRITORES: Desbridamento biológico; Comorbidades; Idoso.

RESUMEN

Objetivos: evaluar el perfil epidemiológico y clínico de pacientes con heridas y aceptabilidad a Terapia Larvaria (TL). **Método:** seguimiento de 15 pacientes con heridas crónicas y registrados en historias clínicas. **Resultados:** pacientes no conocían TL. Edades variaron (45 a 73%), negros (46,66%), blancos (26,66%) y morenos (20,00%), predominantemente mujeres (73,33%). Habían completado la educación primaria (53,33%), media (20,00%) y superior (26,6%). 60% vivían en RJ; Lesiones (edad media de 6 años y superficie media de 9,4 cm²) en el tercio distal de las piernas (53,00%) y pies (47,00%), con origen vascular (40,88%), úlceras por presión (31,69%), diabéticas (16,66%) e infecciosas (10,77%). Pacientes presentaban tres (20,00%), dos (20,00%) o una lesión (60,00%), con necrosis (80,00%), infección (37,60%), granulación (50,30%), epitelización (15,00%), dolor (54,0%) y dificultad locomotiva (47,00%). Insuficiencia venosa como antecedente patológico más observado. Aceptabilidad para TL fue del 93,33%. **Conclusión:** TL es una alternativa a una mejor calidad de vida.

PALABRAS CLAVE: Salud infantil; Lactancia materna; Destete.

INTRODUCTION

Chronic wounds are those that present a delay during their healing by undergoing a prolongation of any of the phases of this process. Some authors define them as wounds that persist for a period of six weeks or more. They are considered a public health problem in Brazil and in the world, for generating consequences in the physical and mental health of those who have them. In addition, they cause a great impact on the health system due to their high cost, since the treatment tends to be very long, and a cure cannot always be achieved. This scenario generates a burden on the health care system.^{1,2}

Patients with chronic wounds have decreased quality of life due to some factors, such as pain, loss of self-esteem, isolation, and body changes, which added together can be triggers for depression. In addition, injuries can lead to work incapacity and absenteeism.³

The management of these wounds requires special care, because they usually evolve quickly and are refractory to conventional treatments. They are often related to factors that predispose to greater difficulty in healing. In addition, these wounds are associated with high rates of hospitalization and complications. Therefore, the management of chronic wounds is extremely complex and can lead to frustration not only for the patients, but also for the caregivers, such as family members and health care professionals.^{4,5}

Chronic wounds are multifactorial, commonly related to some comorbidities such as hypertension, diabetes mellitus, obesity, dyslipidemia, immobility, sedentary lifestyle, and metabolic syndrome. These diseases are increasingly present in the Brazilian population.

Among the main etiologies are vascular ulcers: venous, arterial, and mixed; pressure ulcers; neuropathic: diabetes, leprosy, and alcoholism; infectious: erysipelas, leishmaniasis, and tuberculosis; and those of systemic origin.^{1,6}

Even with all the technological advances experienced in the last century, the management of chronic wounds is still difficult, often with extensive and costly treatment. One option to treat wounds with tissue necrosis is through biotherapies. Among them is the larval therapy, which consists in the direct application to chronic wounds of sterile or decontaminated larvae of some species of necrobiontophagous flies, i.e., that feed exclusively on necrotic tissue. These larvae become sterile as a result of the sterilization process performed on the diptera eggs in the laboratory.⁷

Larval therapy comes as an alternative for the treatment of chronic wounds, and has consistently shown better results than those obtained by traditional therapeutic options, most often recommended by hospital protocols.^{8,9} The healing time with the use of larval therapy is shorter. In addition, the cost of using this form of treatment for chronic wounds is lower when compared to traditional pharmacological therapies, thus offering excellent cost benefit.¹⁰ Currently, there are still few studies in Brazil, but several research studies on larval therapy have been developed mainly in capital cities. The focus of these studies involves everything from the collection of flies to the application of decontaminated larvae to chronic wounds.¹¹

The benefit of using larval therapy is associated with different mechanisms. The mechanical and enzymatic action of the larvae favors the occurrence of debridement, has antimicrobial and anti-

-inflammatory effects, and stimulates fibroblast migration and angiogenesis, which aids in the wound healing process. Larval therapy is increasingly proven to be effective in different wound etiologies, such as venous ulcers, diabetic feet, burns, pressure injuries, tegumentary lesions, bone and soft tissue injuries.⁸ The application of the larvae can take place directly on the chronic wound area being in direct contact without an interface. But one can also use the "biobag", a device used that contains the larvae inside.¹² Thus, larval therapy emerges as a potential alternative for the management of patients with chronic wounds. In addition to providing a good prognosis, its lower cost is also noteworthy.¹³

Brazil has been going through an aging process of population, which is associated with comorbidities that present predisposing factors for wounds. This fact eventually predisposes to an even greater burden on the health system and therefore the management of chronic wounds should be rethought. It is known that these wounds are present on a daily basis in health care facilities and constitute an important percentage of the costs in public health. However, Brazil still lacks statistical analysis about the prevalence and incidence of chronic wounds in the population.⁶

Given this context of greater longevity, with consequent aging of the population in Brazil, coupled with the increase in comorbidities in the population, the number of chronic wounds is increasing. Thus, it is necessary to rethink how these wounds are managed in hospitals.

The objective was to evaluate the epidemiological profile of patients with chronic wounds treated at the Hospital Universitário Gaffrée e Guinle (HUGG), analyze the clinical aspects of the lesions and evaluate the acceptability of Larval Therapy by these patients.

METHOD

The project was approved by the ethics and research committee of the Hospital Universitário Gaffrée e Guinle (HUGG) of the Universidade Federal do Estado do Rio de Janeiro (UNIRIO) CAAE nº 55264716900005285. The study was carried out at HUGG with patients with chronic wounds. The patients were invited to participate in the study and, after their agreement, the Informed Consent Form was signed. A total of 15 patients agreed to participate in the study. Information was collected by interview from August 2019 to February 2020 and completion of an epidemiological and clinical survey form. Clinical aspects of the injury (duration, dimensions, tissues affected, presence of necrosis, infection, healing rate, pain characteristic, etiology, wound location) and epidemiological aspects of the patients (gender, age, ethnicity, education, comorbidities, body mass index (BMI)) were recorded. The project team accompanied patients with chronic wounds in outpatient treatment during the weekly dressing change. A form was applied in relation to the acceptability of larval therapy, being registered the acceptability in relation to its use in direct contact on the skin and with the use of a "biobag". It was also questioned about the reason for refusal or acceptance.

RESULTS

Fifteen patients with chronic wounds were interviewed. All patients stated that they did not know about Larval Therapy before the staff interview.

In terms of sociodemographic data, the ages ranged from 45 to 73 years. Regarding gender; 73.33% (11) were female participants; 26.66% (four) were male. Regarding race, blacks accounted for 46.66% (seven), whites 26.66% (four), and browns 20% (three), and did not inform 6.66% (one). Regarding education, 53.33% (eight) of the interviewed patients had completed elementary school, 20.00% (five) had completed high school, and 26.66% (four) had completed college education. The average BMI (Body Mass Index) of the patients was 29.34 kg/cm³. Regarding the cities where the patients lived, Rio de Janeiro represented 60%, São Gonçalo 20.2%, and Duque de Caxias 19.8%.

The location of the wounds was also observed. A percentage of 38.6% were located on the distal third of the left leg; 30.0% on the dorsum of the left foot; 17.0% on the right foot, and 14.4% on the distal third of the right leg. The observed mean age of development of these wounds was 6 years, with the minimum time being 6 weeks and the maximum time being 15 years.

Regarding the etiology of the wounds, we were able to identify the underlying cause in 80% of the situations. A percentage of 40.88% of the wounds were vascular; 31.69% were pressure ulcers; 16.66% were neuropathic diabetic ulcers, and 10.77% were infectious wounds. As for the wounds of vascular origin; 63.7% had venous origin, 8.6% arterial origin, and 27.7% mixed origin. In the rest, the etiology of the wounds was not clarified. Regarding the number of lesions found in each patient, five patients had three lesions, three patients had two lesions, and nine patients had one lesion. The average area of the lesions was 9.4 cm². Regarding the characteristics of the wounds, 80% had necrosis, 37.6% had infection, 50.3% had granulation, and 15% had epithelialization.

The pathological antecedents were also observed, the most observed was venous insufficiency, followed by arterial hypertension, previous history of ulcer, diabetes, sedentarism, dyslipidemia, obesity and immobility.

Regarding the mobility of patients, it was found that 47% had difficulty in locomotion and 53% walked freely. Regarding pain, 54% of the patients reported pain, and 33% classified it as mild, 49% as moderate, 15% as intense, and 3% as maximum. The pain was constant in 7.5% of the patients, intermittent in 56%, and occasional in 36.5% of the patients.

All patients complained about the financial expenditures for the treatment. The average time of wound care was three years.

When invited to use a biotherapy to remove necrotic tissue using sterilized dipterous larvae and used directly on the wound, and protected with an adequate dressing to prevent the larvae from escaping, the acceptability was 86.66% (13 patients). This number increased with the use of the "biobag", a sacular structure that contains the larvae, avoiding direct contact of the larvae with the wound, only the excretions and secretions of the larvae, to 93.33% (14 patients).

DISCUSSION

At HUGG, there was a higher number of female patients with chronic wounds (73.3%), which did not agree with Oliveira et al. who analyzed the quality of life of people with chronic wounds and showed similarity between genders when it came to outpatient follow-up.³

Regarding age, eight patients (53.3%) were between 57 and 69 years old, which corroborates the study developed by Baptista et al. showing a higher prevalence in this age group in outpatients with chronic wounds in a University Hospital in Niterói, RJ. Moreover, this finding is important because the effects of aging on the physiology of healing are well known; in elderly patients, there is a decrease in thickness and elasticity of the skin, subcutaneous adipose tissue, and capillaries of the dermis. All these conditions slow down the healing process.^{14,15}

Regarding education, 73% of the patients from HUGG had complete first degree, which differs from the work presented by Baptista et al, which shows complete first degree in only 31% of patients with chronic wounds treated at the outpatient level.¹⁵ It is believed that the level of education contributed to the understanding of curative and prophylactic measures for wounds.

It is known that chronic wounds are multifactorial, being related to some comorbidities such as hypertension, diabetes mellitus, obesity, dyslipidemia, immobility, sedentarism and metabolic syndrome, diseases that are increasingly present in the Brazilian population, which corroborates our results because all patients had at least one associated comorbidity. Regarding the etiology in the patients of the Hospital under study, the percentage of pressure sores was high when compared to a study carried out by Oliveira et al. in the city of Teresina (PI).³ The data from HUGG is in agreement with the study conducted by Baptista et al. in which the majority of chronic wounds have a vascular cause as the underlying etiology, of venous origin, besides the majority presenting as a single lesion.¹⁵

The only patient who refused treatment with larval therapy was because of the fear of the larvae being in direct contact with the surface of the body plus the insecurity of biotherapy not working, which is in agreement with the study developed by Masiero et al. These authors proved the efficacy of larval therapy that has been increasingly used in different etiologies of wounds such as venous ulcers, diabetic feet, burns, decubitus ulcers, skin lesions, bone and soft tissue lesions.⁸

Regarding pain, the patients complained less when compared to the study developed by Oliveira et al. However, the percentage of patients complaining of mild pain was similar, moderate pain was higher, and severe pain was also lower.³

It was observed that all patients participating in the project had complaints regarding treatment-related expenses. The management of chronic wounds demands high expenses. These costs are in addition to travel expenses, as many of the patients need outpatient care at least once a week. Added to this is the fact that treatment is prolonged because chronic wounds take a long time to reach complete healing, so that care must be instituted on a

long-term basis. The expense and delay in healing are the main causes of treatment interruption and withdrawal reported by the patients in this study.^{1,16}

It is important to note that the acceptability of Larval Therapy was quite high (86.7%), especially when its use was associated with the "biobag". A study developed in a University Hospital in Central Brazil shows approval in the use of Larval Therapy in 95 patients out of 105 (90.5%), being well accepted, corroborating the present study.¹⁷ Thus, Larval Therapy comes as a viable alternative for the treatment of chronic wounds.

CONCLUSION

Most patients with chronic wounds who attend the outpatient clinic at HUGG are women. Blacks and the elderly are also the majority, and all patients have primary education. Many of these patients have difficulty walking and experience recurrent pain.

All patients have comorbidities, which shows the degree of importance of the relationship with hypertension, diabetes and overweight. In the chronic wounds, it can be seen that most have necrosis, with a significant percentage with infection, mostly located on the distal third of the left leg. Few wounds were epithelialized, showing that the healing process would still be long. The main etiology is venous ulcers of vascular origin, with a mean duration of 6 years.

Furthermore, it is important to note the high acceptability of larval therapy by these patients.

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