



**Original Article**

**VENOUS ULCER: CLINICAL ASSESSMENT, GUIDELINES AND DRESSING CARE**

*ÚLCERA VENOSA: AVALIAÇÃO CLÍNICA, ORIENTAÇÕES E CUIDADOS COM O CURATIVO*

*ÚLCERA VENOSA: VALORACIÓN CLÍNICA, DIRECTRICES Y ATENCIÓN AL CURATIVO*

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The objective was to analyze the clinical profile of venous ulcers, getting familiar with received recommendations and investigating healing procedures. This is an exploratory-descriptive transversal research. The sample consisted of 51 patients with venous ulcers assisted in two vascular surgery clinics in Fortaleza from August to November 2011. Results revealed the existence of venous ulcer for more than one year in 60.8% of cases being that 44.1% of them suffered at least one relapse. The most important healing initiatives according to the patients were: rest (45.1%), limb elevation (23.5%) dressing application (19.6%). As for the place in which the dressing was prepared, 76.5% mentioned home as the primary location. It is suggested that further research on guidelines and dressing care should be carried out, as it is only through researchers' adherence to guidelines in different scenarios that we can learn more about venous ulcer care.

**Descriptors:** Varicose Ulcer; Health Education; Leg Ulcer, Nursing.

Objetivou-se analisar as características clínicas das úlceras venosas, conhecer as orientações recebidas e investigar os procedimentos com a realização do curativo. Pesquisa exploratório-descritiva, transversal. A amostra foi constituída por 51 portadores de úlcera venosa, acompanhados em dois ambulatórios de cirurgia vascular, em Fortaleza, de agosto a novembro de 2011. Os resultados revelaram a existência de úlcera venosa acima de um ano (60,8%) e pelo menos uma recidiva (44,1%), as ações mais importantes para a cicatrização, segundo os portadores, foram: repouso (45,1%), elevar o membro (23,5%) fazer o curativo (19,6%). Quanto ao local de realização do curativo 76,5% referiram o domicílio como local principal. Sugere-se que novas pesquisas sobre as orientações e cuidados com o curativo sejam realizadas, pois somente com a adesão de pesquisadores em diferentes cenários pode-se conhecer com maior propriedade todas as interfaces do cuidado direcionado aos portadores de úlcera venosa.

**Descriptores:** Úlcera Varicosa; Educação em Saúde; Úlcera da Perna; Enfermagem.

El objetivo fue analizar las características clínicas de las úlceras venosas, conocer las directrices recibidas e investigar los procedimientos para realización de curativos. Investigación exploratoria y descriptiva transversal. La muestra constituida por 51 pacientes con úlceras venosas, acompañados en dos clínicas de cirugía vascular en Fortaleza, CE, Brasil, de agosto a noviembre de 2011. Los resultados señalaron la existencia de úlcera venosa encima de un año (60,8%) y por lo menos una recurrencia (44,1%), las acciones más importantes para la curación, según portadores: descanso (45,1%), elevar el miembro (23,5%) preparar el aderezo (19,6%). En cuanto al lugar de realización del curativo, 76,5% mencionaron el hogar como principal. Se sugieren nuevas investigaciones sobre las orientaciones y atención curativa porque sólo con la adhesión de los investigadores en diferentes escenarios se puede conocer más adecuadamente las interfaces de atención dirigida a pacientes con úlceras venosas.

**Descriptores:** Úlcera Varicosa; Educación en Salud; Úlcera de la Pierna; Enfermería.

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## INTRODUCTION

Leg ulcers (LU) are skin lesions prevalent in nearly 1 % of adult population <sup>(1)</sup>. In the United States, VU affect about 1-2% of the population, which translates into a morbidity estimated in 6.5 million patients. Besides, the incidence rate is growing due to lifestyle changes and population aging <sup>(2)</sup>. In Brazil it is estimated that 3% of the population has leg ulcer and this percentage reaches 10% in mellitus diabetes patients <sup>(3)</sup>.

Lu may be: venous, arterial and neurotropic, neuropathic, hypertensive, microangiopathic, atherosclerotic or anemic. However, venous ulcers are the most prevalent with approximately 80 to 85%, of cases, arterial ones account for 5 to 10% and the rest are of neuropathic or mixed origin <sup>(1-2)</sup>. In Brazil there is scarce data on ulcer types. A study performed in Botucatu evidenced a frequency of 1.5% of venous ulcer cases, either active or healed <sup>(4)</sup>.

Venous ulcers constitute the most serious clinical manifestation of chronic venous insufficiency <sup>(5)</sup>. They typically involve spread out pain with foot and ankle edemas generally placed on the medial or lateral malleolus and well-defined edges. They also present necrosis or granulated tissue and variable yellowish exudate that may become deep <sup>(6)</sup>.

Adequate venous ulcer handling requires a therapeutic plan that enables lower limb pulse testing, in particular foot and posterior tibial pulse, as well as healing process and exudate presence assessment, ulcer extension evaluation and localization, infection symptoms (pain, edema and heat) besides specific advice for dressing preparation purposes <sup>(7)</sup>. Techniques used to promote healing include: compression healing, topical treatment, systemic medication and surgical treatment besides behavioral measures, in addition to a multidisciplinary team composed of doctors, nurses, nutritionists and psychologists among others <sup>(1)</sup>.

It is important to highlight that despite the clinical relevance of VU as a public health problem, studies on the subject are incipient, in particular in national literature. Extensive VU research is found on clinical aspects of the lesion and pharmacological treatment; however issues on adequate lesion control and policies adopted for curative procedures require further research.

With this study we expect to contribute to offer more information on the subject, thus helping health teams with regards to venous ulcer patient's care. This is the goal that justifies this study, aiming at analyzing venous ulcers clinical characteristics, getting familiar with treatment advice and investigating curative procedures.

## METHOD

This is an exploratory-descriptive transversal study. It was developed in two vascular surgery ambulatory services located in Fortaleza-Ceará. The first one is located in the eastern region, treating patients from its municipality and the second in the western region, receiving local patients and people from the state interior.

The population was composed of venous ulcer patients accompanied in the referred ambulatory services. Inclusion criteria were: being venous ulcer patients (with medical diagnosis) and not suffering from dementia or other disorders that might affect verbal communication. The exclusion criterion was being in the unit for any type of clinical emergency assistance. Patients were selected in the order they sought assistance and the sample was composed of 51 venous ulcer sufferers under accompanied treatment from August to November 2011.

Interviews were carried out with the aid of a form containing questions related to ulcer characteristics:

relapse, existence time, hospitalizations and localization in different body areas: I: foot area, II: leg and ankle distal half, III: leg proximal half<sup>(9)</sup>. A database was elaborated with the *Access* program with double data entering, exporting it to the *Statistical Package for the Social Sciences* (SPSS Inc., Chicago, United States) version 18.0 to proceed to the descriptive analysis. Numerical variables were distributed into frequencies and introduced through discussion charts based on relevant literature.

Participation was voluntary through the signature of an Informed Consent Agreement. The project was approved by the Research Ethics Committee of the Ceará Federal University Hospital Complex under the nº 112/11.

## RESULTS

Results are introduced in three charts and include data related to venous ulcer and healing clinical profile, guidelines and care.

As for the study participants, 53% were under 60 years of age, 34 (66.7%) were women, and 29 (56.9%) never studied or had less than five years of formal education. The predominant family income comprised workers who earned up to three minimum monthly salaries with 45 persons (88.2%). With regards to housing, 42 (82.6%) were living in their own houses and nine (17.5%) were renting or were living at somebody else's home while 30 (58.8%) of participants lived in homes with no basic sanitation.

**Chart 1 – Distribution of patients according to venous ulcer clinical characteristics. Fortaleza-Ceará, 2011.**

Characteristics	N	%
Relapses		
No	17	33.3
Yes	34	66.7
Once	15	44.
Twice	06	17.7
Three times	06	17.7
Four or more times	07	20.5
Hospitalization		
None	25	49.0
One to four	24	47.0
Above 04	02	04.0
Existence time		
Above one year	31	60.8
Less than six months	11	21.6
Six months to one year	09	17.6
Ulcer localization		
Area I	07	13.7
Area II	40	78.4
Area III	04	07.8
Pain MMII		
Moderate	20	43.5
Intense	19	41.3
Light	07	15.2
Absent	05	09.8

According to Chart 1, it was perceived that 34 (66.7%) of patients suffered relapses, out of which, 06 (17.7%) suffered at least three. From the study group, 25 (49%) were never hospitalized and 02 (04.0%) were

in hospital more than four times. As for the ulcer evolution time, 31 (60.8%) had been ulcer sufferers for more than a year and most of them (40) (78.4%) had the lesion located in area II.

**Chart 2 – Distribution of number of patients according to venous ulcers guidelines and care. Fortaleza-Ceará, 2011.**

<b>Venous ulcer guidelines and care</b>	<b>N</b>	<b>%</b>
Did you receive professional advice?		
Yes	44	86.3
Doctor	27	61.4
Doctor and Nurse	12	27.3
Nurse	04	09.1
Nursing Assistant	01	02.3
No	07	13.7
Advice received		
Dressing preparation	26	51.0
Limb elevation	17	33.3
Rest	16	31.4
Use compression therapy	09	17.6
Use medication	08	15.7
Take care of nutrition	04	07.8
Medical follow-up	01	01.9
Important healing measures		
Rest	23	45.1
Limb elevation	12	23.5
Dressing preparation	10	19.6
Compression therapy	05	09.8
Use medication	07	13.7
Others	12	23.5
Number of meals/day		
Three to four	29	56.9
Five to six	17	33.3
Two	04	07.9
Over six	01	02.0
Current perception on own health		
Bad	25	49.0
Good	20	39.2
Very bad	03	05.9
Excellent	03	05.9
Use of Compression Therapy		
Yes	29	56.9
No	22	43.1
Prophylactic use of benzantine penicillin		
No	33	64.7
Yes	18	35.3
Prophylaxis time for benzantine penicillin		
Zero to six months	11	61.1
> six months	07	38.9

According to Chart 2, it was observed that 44 (86.3%) of patients received professional advice to take care of their wound, out of which 12 (27.3%) said to have been assisted by a doctor or nurse. The most common suggestions named were: dressing preparation 26 (51.0%), limb elevation, 17 (33.3%) and rest, 16 (31.4%). The most important healing measures according to the patients were: rest, 23 (45.1%), limb

elevation, 12 (23.5%) and dressing application 10 (19.6%). We observed that 29 patients (56.9%) were taking three to four meals a day and most of them (28) (54.9%) considered their health to be bad or very bad. As for the compression therapy, 29 (56.9%) were using it while 18 (35.3%) were applying benzantine penicillin, being that 07 of them (38.9%) had been using it for more than six months.

**Chart 3 – Distribution of number of leg ulcer patients according to dressing preparation procedures. Fortaleza-CE, 2011.**

Care	N	%
Frequency		
Once a day	21	41.2
Twice a day	19	37.3
Alternated days	07	13.7
Weekly	04	07.8
Local		
Home	39	76.5
Hospital	08	15.7
Health Care Center	03	05.9
Pharmacy	01	02.0
Responsible party:		
Patient	24	47.0
Relative	14	27.5
Health professional	13	25.5
Training		
No	24	63.1
Yes	14	36.9
Training responsible:		
Nurse	07	47.0
Nursing assistant/technician	05	27.5
Doctor	02	25.5
Medical/hospital cost		
0.00 a 50.0	21	41.2
51.00 a 100.00	17	33.3
101.00 a 150.00	02	03.9
151.00 a 200.00	02	03.9
>200.00	09	17.6
Health Unit Material		
No	36	70.6
Yes	15	29.4
Use/used materials recommended by: Friends		
No	28	54.9
Yes	31	60.8

According to Chart 3, and with regards to dressing application frequency, we noticed that 21 patients (41.2%) were using it daily. As for the place in which application was performed, 39 (76.5%) mentioned home as the main place. Most dressings (24) (47.0%) were applied by the patient him/herself. Out of the patients and/or relatives that applied dressing, only 14 (36.9%) received training, being that 07 (50.0%) were trained by

a nurse. As for dressing costs, 50 patients (78.4%) were spending up to 150.00 reais a month while 15 (29.4%) were receiving materials from the Health Unit. Materials most frequently available were gauze, bandage and saline solution. With regards to the use of home-made products recommended by friends or relatives, most patients (31) (60.8%) admitted to have used medicinal plants or other products.

## DISCUSSION

The age range found here differs from other studies on the same topic, which narrate a higher incidence rate in elderly people<sup>(8)</sup>. As for the incidence

according to sex, research data reaffirms the prevalence of women with venous insufficiency<sup>(9)</sup>, which may be related to female longevity<sup>(6)</sup> and to female hormones, as estrogen is associated to the growth in venous

capacitance and progesterone is linked to vascular wall weakening<sup>(10)</sup>.

The public health service is mostly used by low-income population<sup>(1)</sup>. Data found in this research corroborates such affirmation, as the ambulatory service in which the research was conducted was assisting mostly low income and low schooling level patients.

Research findings expose relevant data, typifying the VU patient as female with little formal education and low income. This patient profile contributes to an inadequate VU management, as ulcer treatment is costly both for patients and their families, being a factor that can affect the chosen treatment type, also resulting in lesion extension and chronicity<sup>(3)</sup>. Many patients don't have adequate financial resources to continue treatment, being necessary that they receive multidisciplinary assistance and inputs for the implementation of curative measures when they cannot be assisted at the health unit.

As for the clinical aspects related to the number of elapse cases, research data corroborates findings from studies that suggest that venous ulcers have high relapse rates and that if not adequately controlled, 30% of them relapse during the first year and 78% in up to two years. Relapse happens due to inadequate lesion treatment, which is related to a number of factors that are not just the health services' responsibility but also the result of patients' changes in attitudes and behavior<sup>1,3)</sup>.

With regards to healing times, literature suggests that it is a challenging process for nurses, as they have to contribute to an accelerated healing process. However, chronic lesions evolve quickly and produce microorganisms that are key factors for the presence of infections<sup>(11)</sup>, which results in long complete ulcer healing times<sup>(12-13)</sup>. Besides, the appearance of edema as a consequence of venous reflux is a factor that

permits the persistence of chronic venous ulcers and may difficult efficient treatment in complicated leg ulcers<sup>(3)</sup>.

According to this study, venous disease is a common cause of hospitalization and the problems cause by it are associated both to the patient's and his/her family's suffering and to the public expenses caused by hospitalization<sup>(14)</sup>.

As for VU location, area II (leg and ankle distal half) was prevalent, which agrees with literature prevalence figures of 73 %<sup>(2)</sup>. Location may vary depending on the ulcer type and venous ones are generally in the most distal area of the lower limbs, in the internal malleolus, being possible to also find it anywhere below the knee, except for the plantar region<sup>(1-2)</sup>.

Pain can be caused by the inflammatory process linked to the lesion or due to the involvement of peripheral nerves. In venous ulcers it is frequent and of variable intensity, usually getting worse by the end of the day and improving with limb elevation<sup>(2)</sup>. Adequate pain treatment in VU patients results in less interference with daily activities.

There are few studies on ulcer care focused on advice to patients. However, we notice that care is basically studied through a technical and fragmented way but it is important that nurses approach health education with attitudes that can encourage the transformation of experienced practices, thus favoring self-care by breaking down treatment compliance barriers, promoting a significant improvement in the quality of life of ulcer patients<sup>(15)</sup>.

Nurses have subsidies to guide patients in order to accelerate the healing process<sup>(13)</sup>. Another necessary healing aspect to consider is the patient's nutritional state, as malnutrition and protein-calorie deficit alter

tissue regeneration, the inflammatory process and the patient's immunity.<sup>(16)</sup>

Health perceptions can be considered as a multidimensional construction involving biopsychosocial functions that affect quality of life. Therefore, patients that consider their health to be bad or very bad, as found in this study, may negatively impact their health conditions, environment-related issues, work and their general satisfaction with life<sup>(17)</sup>.

Most participants used compression therapy, which is responsible for accelerating the healing process and reducing the relapse percentage, acting in macro and microcirculation, increasing venous return and reducing pathologic reflux, thus favoring edema reabsorption and minimizing interstitial liquid flow. It is important to highlight that compression therapy must be accompanied by a doctor, nurse and other health professionals trained to apply it correctly in order to get positive results<sup>(1,15)</sup>.

Although the use of benzatine penicillin has been a frequent practice amongst study participants, literature shows that there is no significant data that supports routine use of systemic antibiotics for leg ulcers except when there is a presence of confirmed infection by culture and antibiogram. The latter generally reveals a predominance of *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Enterobacter* in the venous ulcer lesion<sup>(18)</sup>.

The curative process involves dressing cleaning, debridement and coverage choice, seeking to accelerate the wound healing process, preventing colonization and the appearance of lesion infections. The dressing exchange interval depends on the type of coverage selected and the lesion saturation potential. It is fundamental that the dressing preparation is followed by trained professionals, so that adequate healing process assessment can be made, which includes exudate

analysis, presence or absence of infections, the dressing absorption capacity and correct coverage choice<sup>(7)</sup>.

In this study, a high percentage of dressings were prepared by the patients themselves, when this actually requires adequate training to assess patient conditions with regards to visual acuity, backbone problems and ulcer location. It is the nurse's duty to teach patients and their relatives adequate cleaning techniques, encouraging self-care with the aim of preventing complications and reducing relapse cases<sup>(3)</sup>.

International data shows high expenses with injury treatment in the United States: around 1,335 billion dollars a year without taking into account antibiotics therapy and other pharmacological agents. In Brazil there are no studies on the cost of these treatments, however it is known that one of the factors that affect costs increase in the appearance of infections, which may occur due to inadequate lesion care<sup>(19)</sup>.

With the perspective of a long and costly treatment, venous ulcer patients depend on public health services to receive, through trained professionals, adequate materials and guidance for wound care<sup>(3)</sup>. Due to the lack of materials, patients adopt a certain behavior according to the available materials, using inadequate dressing preparation techniques, in particular with regards to product choice and cleaning.

Ulcer cleaning must be performed with physiological serum or drinking water, disregarding chloredixine, PVPI, soap products and cytotoxic substances that may difficult healing. Presence of devitalized tissue must be immediately evaluated, as well as exudate. For devitalized tissues it is necessary to perform debridement, which consists of retiring necrosed and devitalized tissues. There are countless materials available for wound treatment but there are specific recommendations with regards to application

techniques and replacement that limit their use by people who are not duly trained<sup>(1)</sup>.

Therefore, VU patients' treatment involves symptoms reduction, pain control, edema reduction, lipodermatosclerosis, ulcer healing and relapse prevention. Another important alternative is compression therapy, which favors venous return to the heart, restoring valve competence and impeding incompetent perforant veins reflux. This therapy can be made with compression socks or an elastic or non-elastic bandage compression system<sup>(14)</sup>

It was also observed that many research participants were using inadequate products, oftentimes recommended by people they know, without any scientific proof of efficacy. Another aspect of concern is the fact that these products interfere with the healing process; however, acting in such situations is complex, as this involves not just financial aspects but also cultural issues, which make patient adherence difficult. This reality requires specific communication skills by health professionals.

## CONCLUSIONS

The research provided more information on the reality experienced by venous ulcer patients with regards to clinical aspects and guidance for dressing preparation. A singular data of this study is related to what patients think is important for the healing process, which reveals not just their knowledge on their disease but also the quality of the assistance offered.

Study findings enable health professionals, especially nurses, to provide critical care supported by periodical evaluation based on assistance aimed at feeding, walking, light exercising, healthy habits, compression therapy and affected limb rest.

Another significant contribution is related to the possibility to foster the development of educational

technologies aimed at helping patients and their relatives.

It is suggested that new research on dressing advice and care should be carried out, as it is only through the adherence of researchers to guidelines in different scenarios that we will learn more about all care interfaces directed at venous ulcer patients.

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Received: Aug. 7<sup>th</sup> 2012  
Accepted: May 9<sup>th</sup> 2013