



SOCIODEMOGRAPHIC AND CLINICAL PROFILE OF AMBULATORY PATIENTS WITH LEG ULCERS

PERFIL SOCIODEMOGRÁFICO E CLÍNICO DE PACIENTES AMBULATORIAIS COM ÚLCERAS DA PERNA

PERFIL SOCIODEMOGRÁFICO Y CLÍNICO DE PACIENTES AMBULATORIOS CON ÚLCERAS EN LAS PIERNAS

Fernanda Soares Pessanha¹, Beatriz Guitton Renaud Baptista de Oliveira²

ABSTRACT

Objective: describing the sociodemographic data, health history record and the characteristics of leg ulcers of patients assisted at an outpatient service. **Method:** a retrospective descriptive study. The sample consisted of 31 patients with 45 leg ulcers that had customer evaluation protocols with tissue injuries fully filled treated at the Outpatient Wound Healing of the University Hospital Antônio Pedro/UFF, Niterói/RJ, Brazil. The research project was approved by the Research Ethics Committee, CAAE 13452713.3.0000.5243. **Results:** most patients were women between 60 and 80 years old, venous ulcers carriers, and with hypertension. Most of the wounds had less than 3cm² to 30cm², with devitalized tissues and of granulation in bed, and the hydrogel was 2% mainly employed in the dressings. **Conclusion:** there is the need for evaluation of a larger sample, confirming the importance of an effective documentation of care behaviors of nursing professionals. **Descriptors:** Nursing; Leg Ulcer; Healing.

RESUMO

Objetivo: descrever os dados sociodemográficos, o histórico de saúde e as características das úlceras da perna dos pacientes atendidos num serviço ambulatorial. **Método:** estudo retrospectivo descritivo. A amostra foi composta por 31 pacientes portadores de 45 úlceras da perna que tinham protocolos de avaliação dos clientes com lesões tissulares preenchidos integralmente atendidos no Ambulatório de Reparo de Feridas do Hospital Universitário Antônio Pedro/UFF, Niterói/RJ, Brasil. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, CAAE 13452713.3.0000.5243. **Resultados:** a maior parte dos pacientes eram mulheres, entre 60 e 80 anos, portadoras de úlceras venosas, com hipertensão arterial sistêmica. A maioria das feridas tinha menos de 3cm² até 30cm², com tecidos desvitalizados e de granulação em leito, tendo sido o hidrogel a 2% prioritariamente empregado nos curativos. **Conclusão:** destaca-se a necessidade de avaliação de uma amostra maior, confirmando-se a importância de uma documentação efetiva das condutas assistenciais dos profissionais de enfermagem. **Descritores:** Enfermagem; Úlcera da Perna; Cicatrização.

RESUMEN

Objetivo: describir los datos sociodemográficos, los antecedentes de salud y las características de úlceras en las piernas de los pacientes que asisten a un servicio ambulatorio. **Método:** estudio retrospectivo descriptivo. La muestra consistió en 31 pacientes con 45 úlceras en las piernas que tenían protocolos de evaluación del cliente con lesiones de tejidos llenos integralmente tratados en la Clínica de curación de heridas en el Hospital Universitario Antônio Pedro/UFF, Niterói/RJ, Brasil. El proyecto de investigación fue aprobado por el Comité de Ética en la Investigación, CAAE 13452713.3.0000.5243. **Resultados:** la mayoría de los pacientes eran mujeres de entre 60 y 80 años, que sufren de úlceras venosas, y la hipertensión. La mayoría de las heridas era menos de 3cm² hasta 30cm², con tejidos desvitalizados y de granulación en lecho, y el hidrogel fue 2% empleado principalmente en los apósitos. **Conclusión:** existe la necesidad de una evaluación de una muestra más amplia, lo que confirma la importancia de la documentación eficaz de los comportamientos de cuidado por la parte de los profesionales de enfermería. **Descriptor:** Enfermería; Úlcera de la Pierna; Sanación.

¹Nurse, Master's Student, Postgraduate Program in Health Care Sciences, Nursing School Aurora de Afonso Costa, Fluminense Federal University/EEAAC/UFF. Niterói (RJ), Brazil. Email: fernandapessanh@hotmail.com; ²Nurse, Doctorate Nursing, Professor, Vice-Coordinator of the Postgraduate Program in Health Care Sciences, Nursing School Aurora de Afonso Costa, Fluminense Federal University/EEAAC/UFF. Niterói (RJ), Brazil. Email: beatrizguitton@globo.com

INTRODUCTION

Wounds constitute a serious public health problem due to the large number of patients with changes in skin integrity¹ and also due to the delay of months or even years to complete the healing of chronic ulcers.²

The wound healing process occurs in four highly integrated and overlapping phases: hemostasis, inflammation, proliferation, and tissue remodeling. For correct repair of wounds, these steps must occur in the proper sequence, within a determining period of time and in an ideal intensity.¹ Therefore, many factors can affect wound healing by interfering in one or more stages of this process, determining, thus, an inadequate remedy or a delay in tissue remodeling, leading the injury to the state of chronicity.

From the biocellular point of view, pathological states of inflammation in general are responsible for delayed wound healing, incomplete or uncoordinated.¹ However, it is known that not reaching the healing of a chronic wound via interventions aimed exclusively for biological, and with the application of coatings or dressing simple embodiment.

The healing process can be influenced by many variables, from the social, such as those related to the financial means to purchase materials needed to implement the dressings at home, to the base of pathologies presented by an individual, among others.

For nurses treat patients with leg ulcers it is necessary understanding the tissue repair process, identifying comorbidities and its implications, and recognizing the clinical and histopathological features of ulcers in order to direct assistance.³ Therefore, it is necessary to know the patient as a whole, aiming at not only providing care to the injured, but to individuals in full.

Moreover, recognition of clinical and socioeconomic profile of the population of patients with wounds can generate important information for the development of new guidelines for the treatment, as well as the best use of available resources, helping to reduce the time of treatment and institutional expenses.³

By contrast, little is known about the clinical and sociodemographic characteristics of patients with leg ulcers in Brazil. There are studies conducted to describe the profile of inpatients⁴, or facing the ambulatory subject, but restricted to holders specifically of venous ulcers³, with relevant contribute to decrease this gap in knowledge.

This study was conducted starting from the following guiding question << *What is the sociodemographic and clinical profile of outpatients with leg ulcers?* >>, aiming to:

- Describing the sociodemographic data, health history and characteristics of leg ulcers of patients assisted at an outpatient service.

METHOD

This is a retrospective descriptive study, conducted in Wound Healing Clinic of the University Hospital Antônio Pedro, Fluminense Federal University (Niterói, RJ, Brazil). In this service nursing visits are developed by masters of the Academic Master's Program in Health Care Sciences and faculty of disciplines of the Nursing Graduate Course, accompanied by graduate and holders of scholarship for scientific initiation.

Selecting the survey sample came from the Consumer Assessment Protocols with Tissue Lesions, which are instruments filled annually for each patient Clinic and have, among others, the function of recording the main information needed for the care of injuries, giving subsidies for nursing care. It contains fields relating to identification of the patient and the underlying diseases, as well as, etiology, location, area of extent and wound exudate, type of tissues present in the lesions and, finally, products used during the performance of the dressing.

The population assisted between the months of January 2012 and September 2013 was of 302 patients. To determining the survey sample included all patients of the population that met the established inclusion criteria. There are: being over 18, of both genders, carriers of leg ulcers with or without infectious signs of any etiology or extension area, who had Customer's Evaluation Protocols with Tissue Injuries filled fully, in the period from January 2012 to September 2013. There were excluded those patients who had not filled protocols or whose protocols presented were incomplete. Thus, the study sample was of 31 patients, who had 45 leg ulcers, as many had more than one injury.

The data protocols were entered into a database in Microsoft Excel 2010 software and analyzed by simple descriptive statistics for disclosure of frequencies and percentages of appearance of each characteristic of patients and lesions in treatment. The results were organized in three categories: sociodemographic data, health history and characteristics of the lesions.

This work was conducted as a clipping of the project "Nursing protocol development for patients with tissue injuries: Cross Mapping", which was approved by the Research Ethics Committee of the Faculty of Medicine of UFF, via Brazil Platform⁵, with Certificate of

Presentation for Ethics Assessment number 13452713.3.0000.5243.

RESULTS

◆ Sociodemographic data

Table 1. Distribution of patients according to sociodemographic data. Niterói/RJ, 2013.

Gender	n	%**
Female	18	58,06
Male	13	41,93
Age (years)		
40-60	11	35,48
60-80	17	54,83
Over 80	3	9,67
Living in domicile		
With family	25	80,65
Alone	6	19,35
Schooling		
Illiterate	3	9,67
Elementary School	18	58,06
High School	7	22,58
Higher Education	3	9,67
Occupation		
Retirees or Pensioners	18	58,06
Employees or Freelancers	9	29,03
Unemployed	4	12,90
Family income		
2-5 minimum wages	12	38,70
1-2 minimum wages	9	29,03
Less than 1 minimum wage	9	29,03
More than 10 minimum wages	1	3,22

◆ Health history record

Only two types of wounds were identified in this study: 23 patients had lesions of venous etiology and eight, diabetic etiology, as shown

by Figure 2 below. Chronic venous insufficiency showed as the main medical diagnosis most prevalent, because the 21 patients had.

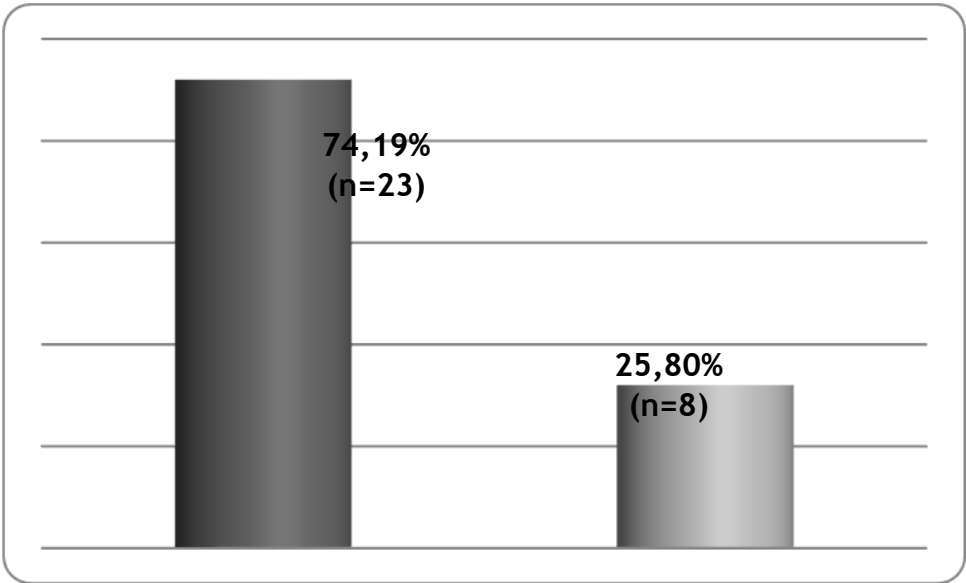


Figure 1. Distribution of patients according to etiology of wounds. Niterói/RJ, 2013.

About the underlying diseases (Figure 2), five patients had only diabetes mellitus as the main diagnosis, three, only hypertension and two, hypertension associated with diabetes mellitus. As underlying disease, diabetes

mellitus appears as in a patient, while hypertension in thirteen patients. In three patients there was the presence of hypertension associated with anemic conditions such as underlying diseases.

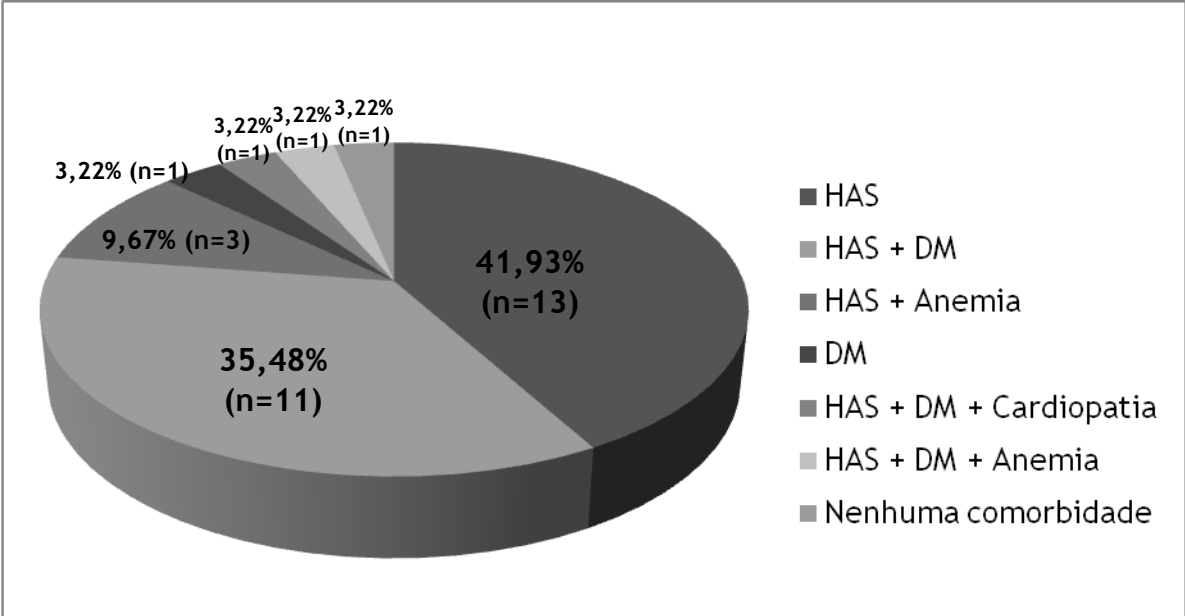


Figure 2. Distribution of patients according to basic diseases. Niterói/RJ, 2013.

◆ Characteristics of ulcers

Ten lesions were found in the medial malleolus and nine in the lower thirds of the legs. Six found themselves in the lateral malleolus, five in the middle thirds of the legs, another five on the backs of the feet, four in the plantar region of the feet, two in the big toe, the other two in the lower and middle thirds of the legs, one at the feet of amputation stump and another on the heels.

Among 45 evaluated wounds, thirteen were smaller than 3 cm² ten had 3,5 to 10 cm², eight showed 20,5 to 30 cm², five were greater than 100 cm², four were circular leg, i.e. not made possible the area determination by the decal method, three had 30,5 to 100 cm², and two were from 10,5 to 20 cm² (figure 4 below).

Regarding the pain reports, from the 31 patients evaluated, thirteen described feeling pain themselves injuries, eight reported no pain, six said they found the pain is in the lower limbs as a whole, two described pain in perilesional areas and other two described pain elsewhere.

Most patients reported no itchy feeling, i.e., only ten of them reported feeling perilesional pruritus, pruritus in the other two described lesion itself and one patient reported itching feeling in the lower limbs. Eighteen patients had edema in the lower extremities, ie, only thirteen patients showed no clinical sign of this.

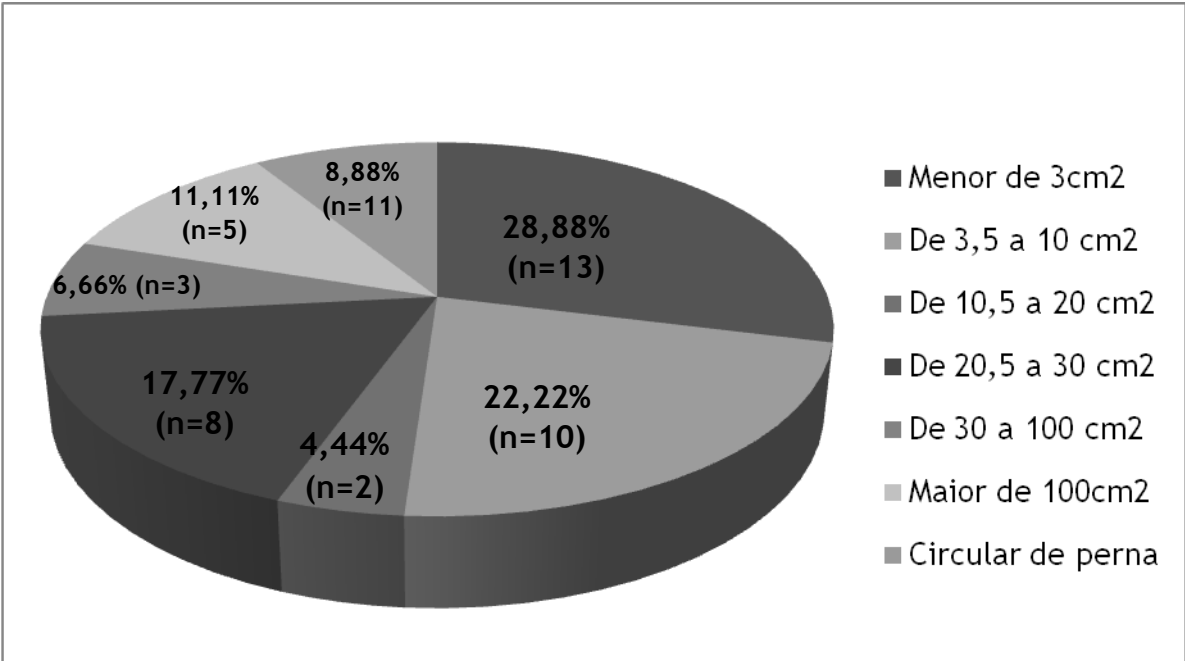


Figure 3. Distribution of lesions according to the extension area. Niterói/RJ, 2013.

Regarding the tissues present in the beds of the lesions (Figure 5 below), there was observed high prevalence of devitalized tissues and of granulation: 22 lesions had

them. Nine wounds had only granulation tissue, and eight showed only devitalized tissue.

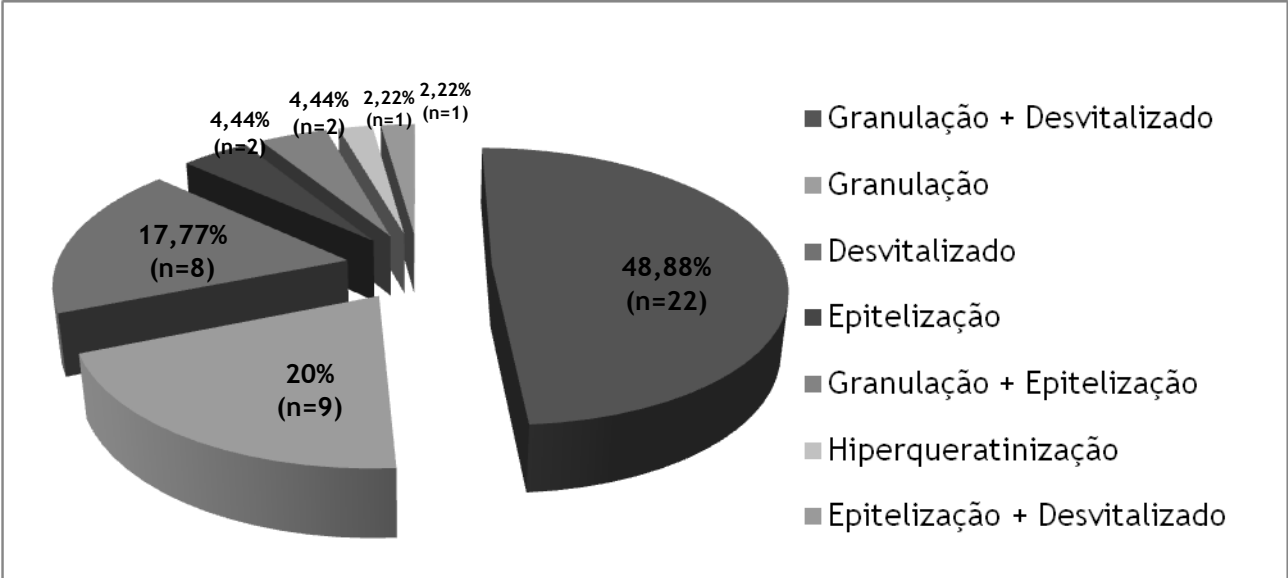


Figure 4. Distribution of lesions according to the type of tissue present in lesional bed. Niterói/RJ, 2013.

Most of the wounds had evaluated macerated edges (n=21). Twelve wounds had edges with epithelization tissue, six were characterized by hyperkeratinized tissue, three had epithelialization and tissue maceration and other three had associated tissue maceration and hyperkeratinized.

The majority of lesions showed only serous exudate (n=25). Fourteen wounds had serosanguineous exudate; three had purulent exudate, two had bloody exudate, and one did not have exudate. It was found the prevalence of lesions with few exudate (n=22). Apart from these, twelve wounds had average amount and ten had lot of exudate.

About the areas adjacent to injuries, wounds had nine adjacent skin hydrated and nine others were hydrated and hyperpigmented skin. Five wounds had dry skin adjacent four had macerated and hyperpigmented tissues, three had erythema, crust and tissue hydration and three were characterized by having adjacent dried and hypopigmented skin. Two wounds had adjacent hydrated skin and erythema and two others were parched, scaly and hyperpigmented tissue. The other lesions were specific and isolated associations of these tissues.

Most lesions observed in this study showed partial depth (n=34), only eight were superficial and three full depth. With regard to the foul odor, 41 wounds had not.

The total product uses in treated lesions was 59, greater than the total number of wounds assessed. This is because, in some cases, different products were applied in the same wound. The most widely used product was hydrogel, 2% (n=20).

In eighteen wounds it was used AGE, in six there was applied silver sulfadiazine, in five it opted for solid Vaseline and in four by papain

to 2%. In three wounds there was used collagenase; in two there was applied activated charcoal; and, in one, petrolatum plate.

DISCUSSION

Studies reiterate⁶⁻⁷ a higher prevalence of wounds in females, which also maintains a relationship with the greater demand for women for health services, in function of the objections raised by men and to seek assistance.

It is known that tissue lesions are diseases that progress negatively with age, due to the higher prevalence of chronic degenerative diseases.^{1,6} In this regard, it is clear that many elderly people have difficulties in carrying out their own basic activities of daily living, such as eating or using the toilet. In 8% of households are observed elderly with these limitations⁸, and is therefore ideal that these patients do not live alone, and at least one person to assume the caregiver position. The low level of education found in this sample can also compromise treatment adherence.⁹

The value from two to five minimum wages, reported as income of most patients in this study contradicts some studies that indicate that the precarious income of patients with tissue injury limits access to health specialized services⁹, since the continuity of care presents a high cost.

It is known that about 75% of all leg ulcers resulting from chronic venous insufficiency.¹⁰ The pathophysiology that determines the development of this disease describes the venous system in the lower limb is classified in superficial system (subcutaneous), deep system (below the muscle fascia) and the piercing connecting veins.¹¹ In vascular dynamics between these vessels, there is the function of the venous pump of the leg,

formed by muscular action and the valves of the veins, which helps the return of venous blood to the heart, and muscle contraction the main activator of this system.¹¹

The pressure in the muscle veins is three times higher than the superficial veins, and the competent venous valves function to prevent backflow, ie, the return of blood from the deep veins to surface. However, that the valves of the superficial and perforating veins are incompetent, blood varies between segments, flowing erroneously. The incompetence of venous valves takes these three systems the patient a venous hypertension frame, which in turn leads to distension of the perforating veins and the most valvular dysfunction, determining the appearance of varicose veins.¹¹

Venous ulcers are wounds erratically, superficial at first, but can become deep, with well-defined edges and often with serous exudate. They may be single or multiple and variable sizes, and locations, but in general, occur in the distal portion of the legs, particularly in the region of the medial malleolus.¹²

Diabetes mellitus is a group of metabolic diseases that occur due to defects secretion and/or insulin action, whose main symptom is a hyperglycemia that can determine complications in various organs, particularly eyes, kidneys, nerves, brain, heart, and blood vessels.¹³ Foot ulcers and amputations of lower extremities are the most serious complications of Diabetes Mellitus, occurring mainly as direct evolution of diabetic neuropathy.¹³

Hypertension is the most common cardiovascular disease, and in Brazil are about 17 million hypertensive patients, 35% of the population 40 years and over.¹⁴ With age occur structural and functional changes in the heart and blood vessels which contribute to increased arterial pressure, such as atherosclerotic plaque accumulation, fragmentation of arterial elastin, increased deposition of collagen and impaired vasodilation.

The result of these changes is a reduction in elasticity of major blood vessels, causing prolonged elevation of blood pressure, which, in turn, in the long term injured blood vessels throughout the body, contributing to death from heart and vascular disease peripheral.¹⁰

Similarly, diabetes is the third leading cause of death by disease in the United States, among other things, due to the high rate associated with peripheral vascular

diseases, and is the leading cause of non-traumatic amputations.¹⁰

The higher prevalence of lesions in medial malleolus and lower thirds of the legs can be explained by the higher number of patients with venous insufficiency, as venous ulcers occur mainly in those places, although they also occur in external locations.¹¹

In respect of the areas of extension of the lesions, the measurement technique used in the industry is the overlay, which consists in drawing the shape of the wound, using a transparent plastic sheet, retro projector pen and paper in centimeters squared. The decal has the advantage of offering the format and the precise size of the lesion, but as disadvantages not describes details of the appearance of the lesion, such as odor, type of fabric and appearance of exudate. This qualitative assessment of the wounds can be better accomplished through the photographic record.

Patients with venous ulcers complain of pain that is accentuated in the evening as soon as the higher prevalence in this study is of venous ulcers, it is acceptable to infer that there is a relationship between the presence of pain and the etiology of most ulcers.¹⁵ Likewise edema, ie, the fact that many patients have edema is consistent with the large number of patients with chronic venous insufficiency.

The dysfunction of the calf muscle pump is also responsible for venous hypertension¹¹, leading to an excessive accumulation of fluid fibrinogen and the subcutaneous tissue, resulting in edema, lipodermatosclerosis and, finally, ulceration.

The devitalized tissue grows into the bed of the cell death function of lesions, which may delay healing by acting as a substrate for bacterial growth, with a constant inflammatory activity, acting as physical barrier for the granulation tissue. The presence of devitalized tissue favors the onset of infection to provide nutrients for bacterial growth, and inhibit bacterial phagocytosis and destruction of tissue repair slowing.³

It is worth noting that prolonged inflammation, impaired angiogenesis or extracellular matrix formation, inadequate synthesis of collagen, the anomalies in the migration and proliferation of cells as well as in inadequate synthesis and secretion of growth factors are mechanisms observed in the formation of chronic wounds.¹¹

These processes are characteristic of chronic ulcers can determine the presence of devitalized tissue wounds, or cause delays

occur in autolytic debridement or enzymatic processes aimed at the removal of slough lesional beds. Thus, it can be said that the removal of devitalized tissue from chronic wounds is slowed.

While the devitalized tissue should be removed from the wound, due to the delay that generates the healing process, the granulation tissue is characterized by being bright red appearance, bright, humid³, rich in newly formed blood vessels, fibroblasts and essential growth factors for the healing to occur.

Granulation tissue is the healing stage prior to epithelialization and is considered objective when it comes to cleaning the wound. That is, when performing a cleaning or debridement lesions, health professionals seek to remove the devitalized tissue, causing wound to reach the granulation stage, preparing it for epithelization. Macrophages direct this phase, since they are the cells responsible for formation of the fabric granulation.¹

To be highly vascularized, it is important that the professional to perform the healing and the mechanical or surgical debridement, avoid injuring the newly formed areas, especially in wounds where there is an association between granulation tissue and devitalized, in which the professional wishes to remove non-viable tissue, but keeping the granulation.

The tissue epithelialization, in turn, features final stages of healing, and just prior to the ripening stage. It develops from the migration of epithelial cells from the wound edges and epithelial attachment to the surface of the lesion¹⁶. These keratinocyte cells are known and are found abundantly in skin¹⁷. In the case of chronic lesions may be located on layer residual basal epidermis, such as, for example, in hair follicles whose bulbs have been preserved, or deep into the epithelium.

The keratinocytes migrate to the wound surface, determining the formation of the basis for the new epithelium, the proliferation of new skin cells and skin laminating the layers that compose it, i.e., the basal layer, spinous, granular, and lucid and cornea.¹⁷

Maceration prevents approximation of wound edges, i.e., the horizontal healing. In general, when patients are well informed about the need for change of dressings, use the correct coverage and adequate application thereof, the occurrence of macerated edges is less, given that the largest soaking causes are excess enzyme product applied to the wound bed, which finishes

addressing the edges and injuring them, or the exposure time of this wound exudate to its own.

For healing to occur it is necessary to control the humidity of the wound bed.¹⁶ While the dried wound causes a slow migration of epithelial cells, excess exudate is also harmful because it may cause maceration of the surrounding skin and margin. Under these conditions, it is necessary to control swelling and excess fluids to avoid maceration.

So, as nursing care prevents maceration edges, the professional must carry out exchange of dressings periodically according to the etiology of the ulcer and the product in use. But it is also fundamental that patients are told to change the bandages at home whenever you notice that the dressing is no longer externally clean and dry.

The tissue hyperkeratinization or, hyperkeratosis, occurs primarily in diabetic ulcers neuropathics¹⁸, appearing as a defense mechanism of the body, as objective protect the injured area of new diseases. As a result, it should not be removed completely, but gradually and continuously.

Hyperpigmentation of the adjacent skin is one of the clinical signs observed in patients with chronic venous insufficiency in phases over advanced.¹¹ The large number of lesions with serous exudate relates to the significant amount of veins.¹⁹ ulcers This is a positive finding, since the bleeding indicates that the wound is still in the early phase of healing, that is, waiting for the hemostasis process is complete. A very exudative wound may represent a prolonged inflammatory phase or infection as well as forming a barrier to wound healing. Similarly, other studies report that venous ulcers have also primarily partial depth.¹⁹

The fetid odor is a clinical sign of wound infection and is often present in venous ulcers.¹⁹ The small number of patients with foul odor in the lesions is a fact that has been repeated in several assessments with patients in the Ambulatory from other research performed. This is because the sample is generally composed of patients who have participated in other studies and are continuously attending the unit, receiving the necessary guidelines to avoid any clinical condition that determines the presence of unpleasant odor in the wounds.

The hydrogel polymer is made insoluble and has high water content and can be used in various types of wounds.²⁰ It has the ability to absorb exudate and to moisturize resected

wounds, stimulating debridement. One justification for the priority use of the hydrogel 2% in this study lies in the fact of being manufactured at a cost reduced by the Pharmacy University of UFF, making it very accessible financially to patients.

Essential fatty acids make up a product originating from polyunsaturated vegetable oils such as linoleic acid, caprylic acid, capric acid, vitamin A, E, and soy lecithin. They are required to maintain the integrity of the skin and the water barrier. They have a comprehensive range of indications²⁰, which may explain the high frequency of use of AGE recorded in this work.

For the choice of products to be applied on the wounds should take into account the etiology of injury and histological features, aiming to carry dressings that configure in barriers against foreign infectious agents, keep the temperature and humidity, but also control the excess exudate, to be applied and removed without damaging the present granulation tissue and, when necessary, conducive debridement of non-viable tissue.

CONCLUSION

There were evaluated 31 patients carriers of 45 leg ulcers. From the socio-demographic point of view, it became clear that most of the patients assisted were female, aged between 60 and 80 years old, living with family members and retirees. The health history, in turn, pointed out, especially for people with venous ulcers, chronic venous insufficiency as the main medical diagnosis, and hypertension as comorbidity.

Regarding the characteristics of the wounds, it saw that most of them presented extension area ranging from less than 3cm² up to 30cm², with devitalized tissue and in bed granulation, maceration on the edges, partial deep, with pain and injuries perilesional edema without itching or foul odor. The product most used with patients was hydrogel at 2%.

As limitation of this study highlight the need for evaluation of a larger sample, being necessary, therefore, the fulfillment of a greater number of Evaluation Protocols of Customer with Tissue Injuries. That is, the need for more effective documentation of assessments and interventions by the nursing staff has been reiterated in this study.

As contributions of this work in caring for patients, it has the confirmation of the registration problem of the activities of the nursing staff, which points to the need for education initiatives in service, aiming to

ratify among professionals the need to document their behavior. Already the research point of view has been the continuation of studies related to the Project "Development of nursing Protocol for patients with tissue injury: Cross-Mapping", aiming to resolve the gaps regarding the documentation of nursing activities.

REFERENCES

1. Guo S, DiPietro LA. Factors Affecting Wound Healing. J Dent Res [Internet]. 2010 Mar [cited 2014 Mar 10];89(3):219-29. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2903966/>
2. Martins MM, Tipple AFV, Reis C, Santiago AB, Bachion MM. Úlcera crônica de perna de pacientes em tratamento ambulatorial: análise microbiológica e de suscetibilidade antimicrobiana. Cienc Cuid Saude [Internet]. 2010 July-Sept [cited 2014 Mar 11];9(3):464-70. Available from: <http://periodicos.uem.br/ojs/index.php/CienCuidSaude/article/viewFile/8178/6635>
3. Oliveira BGRB, Nogueira GA, Carvalho MR, Abreu AM. Caracterização dos pacientes com úlcera venosa acompanhados no Ambulatório de Reparo de Feridas. Rev Eletr Enf [Internet]. 2012 Jan-Mar [cited 2014 Mar 9];14(1):156-63. Available from: <http://www.fen.ufg.br/revista/v14/n1/pdf/v14n1a18.pdf>
4. Sant'Ana SMSC, Bachion MM, Santos QR, Nunes CABN, Malaquias SG, Oliveira BGRB. Úlceras venosas: caracterização clínica e tratamento em usuários atendidos em rede ambulatorial. Rev Bras Enferm [Internet]. 2012 July-Aug [cited 2014 Apr 13];65(4):637-44. Available from: <http://www.scielo.br/pdf/reben/v65n4/a13v65n4.pdf>
5. Brasil. Ministério da Saúde. Conselho Nacional de Saúde. Resolução Nº 466, de 12 de dezembro de 2012. Dispõe sobre as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Available from: <http://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf>
6. Cavalcante AMRZ, Moreira A, Azevedo KB, Lima LR, Coimbra WKAM. Diagnóstico de enfermagem: integridade tissular prejudicada identificado em idosos na Estratégia de Saúde da Família. Rev Eletr Enf [Internet]. 2010 Oct-Dec [cited 2014 May 1];12(4):727-35. Available from: <http://www.revistas.ufg.br/index.php/fen/article/view/8425/8496>
7. Malaquias SG, Bachion MM, Nakatani AYK. Risco de integridade da pele prejudicada em

idosos hospitalizados. *Cogitare Enferm* [Internet]. 2008 July-Sept [cited 2014 Mar 11]; 13(3):428-36. Available from: <http://ojs.c3sl.ufpr.br/ojs2/index.php/cogitare/article/view/13040/8820>

8. Queiroz ZPV, Lemos NFD, Ramos LR. Fatores potencialmente associados à negligência doméstica entre idosos atendidos em programa de assistência domiciliar. *Ciênc Saúde Coletiva* [Internet]. 2010 Sept [cited 2014 Mar 11];15(6):2815-24. Available from: <http://www.scielo.br/pdf/csc/v15n6/a19v15n6.pdf>

9. Malaquias SG, Bachion MM, Sant'Ana SMSC, Dallarmi CC, Lino Junior RS, Ferreira PS. Pessoas com úlceras vasculogênicas em atendimento ambulatorial de enfermagem: estudo das variáveis clínicas e sociodemográficas. *Rev Esc Enferm USP* [Internet]. 2012 Apr [cited 2014 Apr 3];46(2):302-10. Available from: <http://www.scielo.br/pdf/reeusp/v46n2/a06v46n2.pdf>

10. Smeltzer SC, Bare BG Hinkle JL, Cheever KH. Brunner & Suddarth - Tratado de Enfermagem Médico-Cirúrgica. Rio de Janeiro, Guanabara Koogan; 2009.

11. Morison MJ, Moffatt CJ, Franks PJ. Úlceras de perna - Uma abordagem de aprendizagem baseada na solução de problemas. Tradução ao português de Leg ulcers - A problem-based learning approach, 2007 Ed Elsevier. Portugal, Editora Lusodidacta, 2010.

12. Salomé GM. Assistência de enfermagem ao indivíduo com úlcera venosa. *J Nurs UFPE on line* [Internet]. 2012 Dec [cited 2014 Mar 11];6(12). Available from: http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/4052/pdf_1767

13. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Diabetes Mellitus - Cadernos de Atenção Básica. Brasília: Ministério da Saúde, 2006. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/diabetes_mellitus.PDF

14. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Hipertensão arterial sistêmica para o Sistema Único de Saúde. Brasília, 2006. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/caderno_atencao_basica15.pdf

15. Takahashi P. A predictive model for venous ulceration in older adults: results of a retrospective cohort study. *Ostomy Wound Manage* [Internet]. 2010 Apr [cited 2014 Mar 11];56(4):60-6. Available from:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2975563/pdf/nihms224935.pdf>

16. Santos JB, Porto SG, Suzuki LM, Sostizzo LRZ, Antoniazzi JL, Echer IC. Avaliação e tratamento de feridas. Hospital das Clínicas de Porto Alegre. 2011. Available from: <http://www.lume.ufrgs.br/bitstream/handle/10183/34755/000790228.pdf?sequence=1>

17. Mendonça RJ, Coutinho-Netto J. Aspectos celulares da cicatrização. *An Bras Dermatol* [Internet]. 2009 July [cited 2014 May 1];84(3):257-62. Available from: <http://www.scielo.br/pdf/abd/v84n3/v84n03a07.pdf>

18. Duarte N, Gonçalves A. Pé diabético. *Angiol Cir Vasc* [Internet]. 2011 June [cited 2014 Mar 10];7(2):65-79. Available from: <http://www.scielo.oces.mctes.pt/pdf/ang/v7n2/v7n2a02.pdf>

19. Chatterjee SS. Venous ulcers of the lower limb: Where do we stand? *Indian J Plast Surg* [Internet]. 2012 May-Aug [cited 2014 Mar 9];45(2):266-74. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3495377/>

20. Franco D, Gonçalves LF. Feridas cutâneas: A escolha do curativo adequado. *Rev Col Bras Cir* [Internet]. 2008 May-June [cited 2014 Mar 10];35(3):203-6. Available from: <http://www.scielo.br/pdf/rcbc/v35n3/a13v35n3.pdf>.

Submission: 2014/05/29
Accepted: 2015/05/26
Publishing: 2015/07/01

Corresponding Address

Fernanda Soares Pessanha
Rua Cândido Reis, 582
Bairro Coelho
CEP 24741-103 – Gonçalo (RJ), Brazil