

## Therapeutic Management and Evolution of Chronic Ulcerations of The Legs In Bangui, Central African Republic

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### Abstract

**Introduction:** The therapeutic management of leg ulcers faces many challenges in resource-limited settings. The purpose of the work was to describe the treatment and evolution of these ulcers in Bangui.

**Material and methods:** This was a cross-sectional prospective study involving patients aged 18 and over hospitalized from October 2014 to June 2016 for a leg ulcer in the Bangui Surgery Department.

**Results:** A total of 41 patients were included. Cutaneous infection (41.5%) was the main cause of leg ulcers, followed by trauma (34.1%). In 63.4% of cases, the leg ulcer had evolved for less than 12 months. Self-medication was observed in 48.8%, while 29.2% was previously treated by traditional practitioners. The Para clinical examinations were hemogram (26.8%), HIV serology (26.8%) and histology (2.4%). All patients received medical treatment with antibiotics (ceftriaxone + metronidazole or Ciprofloxacin), antitetanus serum (1500 IU) and analgesic in case of pain. Blood transfusion was done in 17.1% of patients. Land treatment was prescribed for 46.3% of patients. All our patients had received local treatment depending on the state of the ulcer. Surgical treatment in 35 cases (85.4%) was done by mechanical debridement at the scalpel blade (71.42%), skin grafting (17.14%), amputation (8.57%) and excision (2.85%). The average duration of hospitalization was 33 days. About 36.6% of the patients had died. The cost of care is approximately 414,800 FCFA or 829.6 dollars per patient.

**Conclusion:** The mortality rate is still high. It is essential that strategies based on the information of the patients, the sensitization of the population and the training of the medical and paramedical personnel be developed in order to reduce the long duration of evolution of the disease and therefore of care.

**Keywords:** Leg ulcers, Treatment, Evolution, Bangui.

### Introduction

Leg ulcer is defined as a chronic wound (evolving since 4 weeks) with no spontaneous tendency to heal, sitting in the leg or ankle. It is of variable extent, provoked or insidious appearance. Leg ulcers are very often disabling and can lead to many hospitalizations [1-3]. These can be infectious, neurological, hematological, tumoral or genetic [2]. The treatment follows two main principles: the suppression of the cause that prevents healing and the local treatment of the wound that can be medical or medical-surgical [4-8]. The evolution is done by different successive phases: the debridement, the budding, the epidermization. This evolution can be accelerated by hygienic and dietary measures and surgical means (mechanical debridement, grafts) or the cause (compression, sclerotherapy, surgical destruction of varicose veins, lymphatic

drainage, and physiotherapy) [7,8]. Complications can enamel this evolution: infectious (erysipelas, lymphangitis, sepsis), allergic (eczema of contact), dystrophic calcifications, very frequent and the cancerization [7].

### Material and Methods

This was a prospective study that took place between October 2014 and June 2016 ie 21 months. The study population was represented by all patients treated at the General Surgery Department at the Friendship Hospital. The sample consisted of patients of both sexes with leg ulcers. We included all patients 18 years of age and older who had a loss of skin substance with no tendency to spontaneous scarring and had been in the general surgery department for at least 4 weeks, sitting in the leg or ankle. Patients with recent loss of substance sitting in the leg and other parts of the body were not included. All patients received medical treatment with antibiotics

(ceftriaxone + metronidazole or Ciprofloxacin), antitetanus serum (1500 IU) and analgesics for pain. Blood transfusion was done according to the case. The local treatment was to make a dressing twice daily and then every other day depending on the case. We had used saline for cleaning and dressing; antiseptics (polyvidone iodine) were applied to the peri-ulcer region. The surgical treatment was done by the scalpel blade. It consisted of mechanical debridement, skin grafting, amputation or excision depending on the case. Patients were followed to the exit. The data was collected using a pre-established questionnaire, entered using Excel software and analyzed with the info7 software. The chi-square test was performed to compare proportions with a significance level of 5%. The difficulties encountered were the following: the missing information on the card, the exits against medical advice, the secret exits of the hospital, and the high costs of interventions.

## Results

A total of 41 cases of leg ulcers were identified in 1080 hospitalized patients, ie 3.8%. The average age was 50.2 years. The sex ratio (M / F) was 1.4. In 63.4% of cases, the leg ulcer had evolved for less than 12 months. The distribution of cases of leg ulcers according to the management of previous hospitalization has shown: self-medication (48.8%), traditional practitioner (29.2%) and medical structure (22.0%). The duration of progression before hospitalization was less than 12 months (63.4%), 1-5 years (34.1%) and 6-10 years (2.5%). Necrotic angioderma ulcers and arterial ulcers accounted for 21.4%, respectively. Paraclinical examinations frequently performed were hemogram (26.8%), HIV serology (26.8%) and histology (2.4%). Bacteriological samples (4.9%) were rare. All patients (100%) received medical treatment according to the protocol. The blood transfusion was made to 7 patients, ie 17.1%. Land treatment (Table 1) was prescribed to 19 patients, ie 46.3%. Surgical treatment (35/41 or 85% of cases) consisted of a debridement (71.4%), graft (17.1%), amputation (8.6%) or excision (2.9%). The grafts were in pellets (Figure 1) or mesh (Figure 2).

**Table 1: Distribution of cases of leg ulcers according to the treatment of associated conditions**

| Grounds                 | Number n = 19 | Percentage (%) |
|-------------------------|---------------|----------------|
| VIH                     | 7             | 36,8           |
| Diabetes                | 6             | 34,6           |
| HIV + Diabetes          | 1             | 5,3            |
| Hypertension + Diabetes | 4             | 21,1           |
| Hypertension            | 1             | 5,3            |
| Total                   | 19            | 100            |

Mean hospital stay (Table 2) was 33 days with extremes of 4 to 90 days.

**Table 2: Distribution of cases of leg ulcers by duration of hospitalization**

| Duration of Hospitalization (in days) | Number | Percentage (%) |
|---------------------------------------|--------|----------------|
| 0 – 14                                | 7      | 17,0           |
| 15 – 29                               | 9      | 21,9           |
| 30 – 44                               | 11     | 26,8           |
| 45 – 59                               | 7      | 17,0           |

|         |    |      |
|---------|----|------|
| 60 et + | 7  | 17,0 |
| Total   | 41 | 100  |

More than 50% of patients were hospitalized beyond 30 days. Table III shows the distribution of patients according to the exit-mode of the hospital. We recorded 36.6% of deceased leg ulcer patients.

**Table 3: Distribution of Leg Ulcers by Exit Mode**

|                    | Number    | Percentage (%) |
|--------------------|-----------|----------------|
| Death              | 15        | 36,6           |
| Healing            | 08        | 19,5           |
| Evolutionary ulcer | 11        | 26,8           |
| Out of sight       | 07        | 17,1           |
| <b>Total</b>       | <b>41</b> | <b>100</b>     |



**Figure 1: Pellet graft in a burnt**

**Figure 2: Fishnet graft**

The average cost of care is approximately 414,800 CFA Franc, ie 829.6 US dollars per patient. This cost is broken down approximately as follows: surgery (skin grafts 37250-52900 CFA Franc), biological examinations (10400 CFA Franc), 33-day dressing (16500CFA Franc), hospitalization costs (33000 CFA Franc). The cost of the 33-day dressing kit was average of 198,100 CFA Franc.

## Discussion

The purpose of this study was to contribute to the study of the management of leg ulcers. The less equipped technical platform are all difficulties that have hindered the smooth progress of the study. Nearly half of the patients had self-medication and just over a quarter had gone to the traditional healer before the hospital. This visit to the traditional practitioner before the hospital was also noted by Rigal and the use of natural products such as honey and royal jelly [9]. Some patients were treated at the city level before the hospital as reported by Thomas who referred to the hospital-city relay in the management of wounds [10]. Our therapeutic attitude consisted of a medical resuscitation, most often the introduction of a probabilistic antibiotherapy combining  $\beta$  lactam + aminoglycoside + imidazole or fluorine quinolone + aminoglycoside. This therapeutic protocol is used as well as by Souissi and Ndiaye [11,12]. Treatment of underlying conditions (antiretrovirals, antihypertensives, antidiabetic agents) was essential to obtain excellent results in 19 patients as in the case of certain authors [13, 2, 4]. Surgical procedures included debridement of the scalpel or scissors under general anesthesia, followed by cutaneous graft delivery in 14.6% of cases and in 7.3% of cases trans-tibial amputation in the presence of extensive gangrene. In the Souissi study, two patients underwent skin grafting and two others had amputation [11]. On an evolutionary level, the overall death rate was 36.6%. Total healing was achieved in 19.5%

of cases and 26.8% of our patients achieved partial healing. Our results are almost similar to those reported by Souissi and Zaraa who got 26% and 25% healing [11,14]. On the other hand, Ndiaye had a higher proportion (61.8%) of favorable results [12]. The median duration of hospitalization in our patients was 33 days with extremes of 4 days to 90 days, similar to that reported by Souissi in Tunisia whose average hospital stay was 33 days [11]. The cost of the treatment of this disease was 414,800 FCFA, ie 638,15 € or 829,6 \$. This cost takes into account the consultation, the hospitalization costs, the nursing care, the surgical acts and the cost of dressing kits. This cost is excessively expensive for our patients who have mostly unfavorable socio-economic conditions. This cost is nevertheless lower than that of France which is 888 € and in Germany [15].

## Conclusion

Our study has shown that treatment is often difficult in our context and is limited to detoxification and skin grafting. The mortality rate is still high. The availability of para-clinical examinations, the cost of care and the follow-up of patients are essential elements in order to reduce the high proportion of deaths. It is essential to develop a real policy of strengthening the technical platform in hospitals and health insurance for the benefit of the population.

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