

## Chronic Venous Insufficiency – Clinical-Evolutional Aspects

I. FLOREA<sup>(1)</sup>, LOREDANA ELENA STOICA<sup>(2)</sup>, I. ȚOLEA<sup>(2)</sup>

<sup>(1)</sup>Department of Dermatology, Emergency University Hospital Craiova, <sup>(2)</sup> Department of Dermatology, University of Medicine and Pharmacy Craiova

**ABSTRACT** Chronic venous insufficiency (CVI) is one of the most common diseases in the world. CEAP classification succeeded for the first time to objective scientific bases of chronic venous insufficiency. It is still perfectible. Having as aim the identification of the clinical-evolutional aspects of the chronic venous insufficiency we have undertaken a retrospective study for a period of 6 years, from 1<sup>st</sup> January 2004 to 31<sup>st</sup> December 2009, on 864 patients hospitalised in the Dermatology Clinic of Craiova, whom indicated chronic venous insufficiency. Results. In the group of patients, prolonged standing was found in 67.8% of patients (Chart 6). Determinants of chronic venous insufficiency were: varicose disease - 582 cases; deep thrombophlebitis - 273 cases; venous dysplasia - 9 cases. Given the CEAP classification, in the group hospitalized patients, we encountered the following situation: stage C4 (pigmentation, varicose lesions, lipodermatosclerosis and white atrophy of Milian) - 42 cases; stage C5 (healed venous ulcer) - 63 cases; stage C6 (active venous ulcer) - 759 cases.

**KEY WORDS** *chronic venous insufficiency, varicose disease, evolution*

### Introduction

Chronic venous insufficiency (CVI) is one of the most common diseases in the world. Despite this, chronic venous insufficiency often remains undiagnosed, being overlooked and underestimated, so patients and physicians, especially in the early stages. Chronic venous insufficiency have a very broad spectrum of clinical manifestations [1, 2].

CEAP classification succeeded for the first time to objective scientific bases of chronic venous insufficiency. It is still perfectible. Venous dysfunction scores provides an overview of the severity of chronic venous insufficiency evolutionary on the prognosis and treatment measures and resources which require support.

### Patients and method

Starting from these data, we have submitted to perform a retrospective study for a period of 6 years, from 1<sup>st</sup> January 2004 to 31<sup>st</sup> December 2009, on 864 patients interned in the Dermatology Clinic of Craiova, whom indicated chronic venous insufficiency.

For each of the cases taken for research, an individual data was drawn up, by also stating besides the personal data (such as age, sex, profession), a series of other observations regarding:

- The state of the cutaneous organ;
- The existence of some preliminary or concomitant troubles, facilitating the development of chronic venous insufficiency;
- Its starting manner;

- The evolution in time, until the specialised examination;
- Current state;
- Clinical diagnosis;
- usual exploration results;
- hospital treatment;
- Recommendations discharge.

The data have been statistically processed, taking into account the following objectives:

The clinical-statistical study aimed to:

- A. State the territorial repartition of this disease bearers;
- B. Set the distribution by age, sex and profession;
- C. Surveillance in time in relation to the spontaneous progress of the lesion or by start.

The etiopathogenic study aimed at:

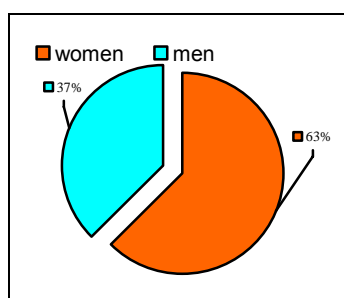
- D. A. finding of etiological factors involved in triggering and / or exacerbation of chronic venous insufficiency

The clinical study has tried:

- E. Starting manner;
- F. Evolutional particularities connected to localisation, clinical form and state of the cutaneous organ.

### Results

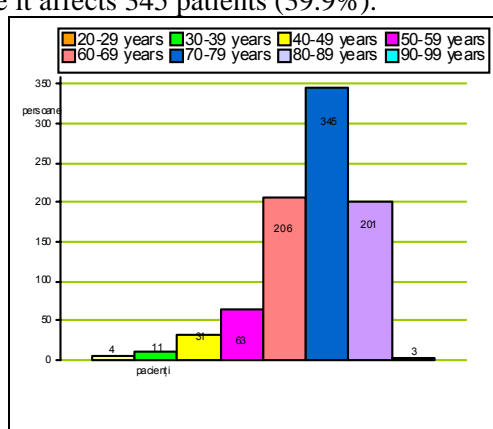
Sex ratio is 1.67 in favour for women. It may be noticed that this disease have indicated a predominance for the feminine sex in 541 cases, them with a standing occupations, respectively 62.6% compared to the masculine sex, which indicated 323 cases, respectively 37.4% (Chart 1).



**Chart 1 – Sex distribution**

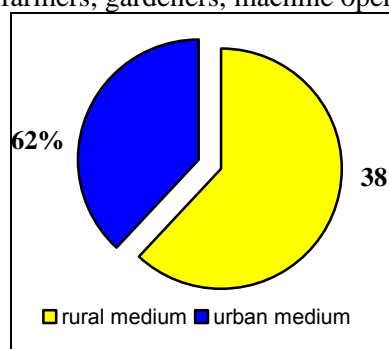
The average age of patients was of 69.6, with a limit within 26 and 91 years.

The repartition of patients with chronic venous insufficiency of the studied lot, according to age groups (Chart 2), indicated that CVI has a *maximum frequency* for the age group of 79-79, where it affects 345 patients (39.9%).



**Chart 2 - Age group distribution**

The repartition of the cases according to the background environment (Chart 3) indicates a predominance of patients originating from rural environment, representing 61.8% of the cases (534 cases), a possible explanation being that most of them had occupations involving a prolonged standing (farmers, gardeners, machine operators).

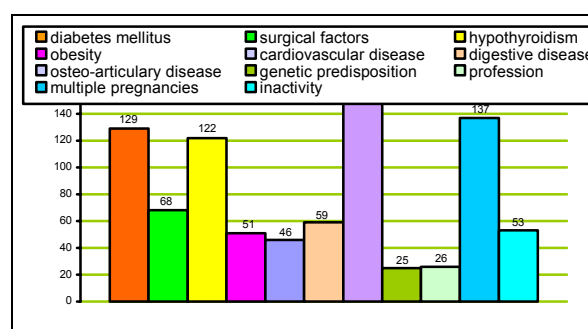


**Chart 3 – Environment distribution**

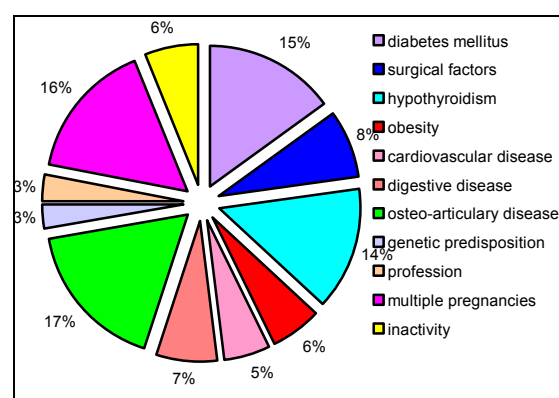
The contributory factors in our group of patients with chronic venous insufficiency of were (Chart 4,5):

- diabetes mellitus - 129 cases

- surgical factors - 68 cases
- hypothyroidism - 122 cases
- obesity - 51 case
- cardiovascular disease - vascular - 46 cases
- digestive disease - 59 cases
- osteo-articular pathology - 148 cases
- genetic predisposition - 25 cases
- profession - 26 cases
- multiple pregnancies - 137 cases
- inactivity - 53 cases



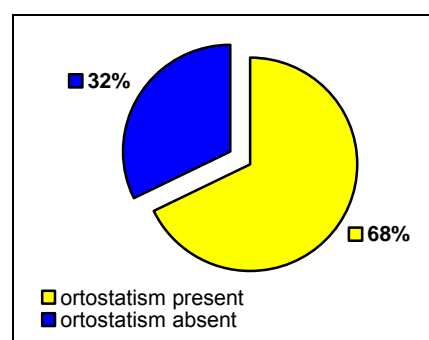
**Chart 4 – Associated diseases**



**Chart 5 – Associated diseases - percentage**

One aim of our study was to research the clinical aspects of chronic venous insufficiency in patients enrolled in our study group and their evolution. *The start of the disease* was in between 6 months and 15 years.

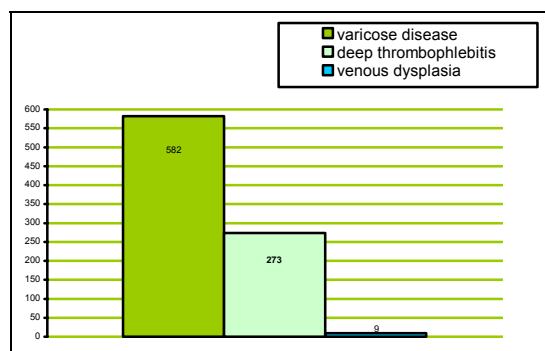
- In the group of patients, prolonged standing was found in 67.8% of patients (Chart 6).



**Chart 6 - Prolonged standing distribution**

Determinants of chronic venous insufficiency were (Chart 7):

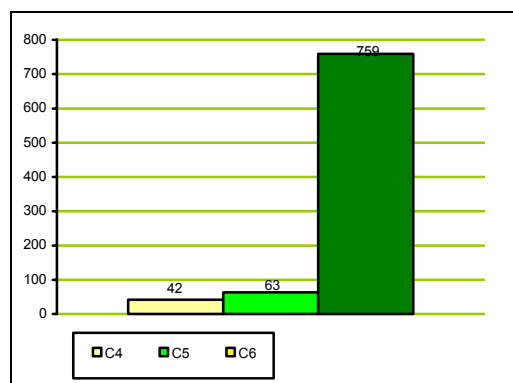
- varicose disease - 582 cases;
- deep thrombophlebitis - 273 cases;
- venous dysplasia - 9 cases.



**Chart 7 – Determinant factors distribution**

Given the CEAP classification, in the group hospitalized patients, we encountered the following situation (see Chart 8):

- Stage C4 (pigmentation, varicose lesions, lipodermatosclerosis and white atrophy of Millian) - 42 cases;
- Stage C5 (healed venous ulcer) - 63 cases;
- Stage C6 (active venous ulcer) - 759 cases.



**Chart 8 - CEAP distribution**

This significant difference other than perhaps explained by the fact that patients with CVI in our area are presented later to the doctor, a very large number of superficial and deep thrombophlebitis remains undiagnosed and treated empirically.

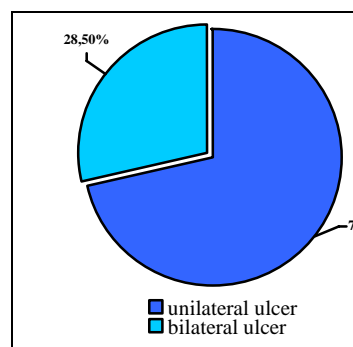
After ulcer location (Chart 9):

- unilateral leg ulcers - 618 cases (71.5%);
- bilateral leg ulcers - 246 cases (28.5%).

Clinical - evolutionary aspects shows that in most cases of the study group permanent scleredema that has not changed after treatment, dermal chronic eczema and hyperpigmentation of lower legs (pigmentary dermatitis) due to repeated extravasation of ferric pigment.

At patients studied the leg ulcer ranged:

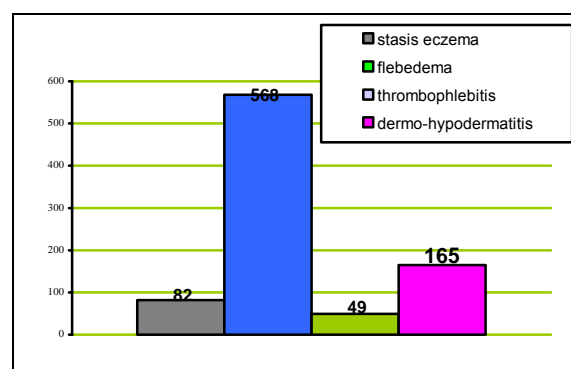
- antero-internal face of the 1/3 lower shank - 566 cases (65.5%);
- external face of the shank in the external malleolus - 178 cases (20.6%);
- ½ lower tibial ridge - 73 cases (8.4%);
- the back of the leg - 47 cases (5.5%).



**Chart 9 - Ulcers distribution**

The most frequently accuses were limb pain (576 cases), skin edema and trophic disorders in advanced cases. In this last category flebedema, pigmentary dermatitis, cellulitis sclera, thrombophlebitis were the offending local complications.

Thus the study group, the most common sign flebedema found in 568 patients was followed by dermo-hypodermatitis in 165 patients, stasis eczema in 82 patients and thrombophlebitis in 49 patients (Chart 10).



**Chart 10 – CVI manifestations**

## Discussions

Clinical manifestations induced by chronic venous insufficiency are varied and polymorphous, wearing these items: flebedema, and pigmentary purpuric dermatitis, stasis eczema; dermohypodermatitis, varicose superficial thrombophlebitis, varicose ulcer [3].

### Flebedema

It is the first sign of venous circulation decompensation, regardless of initial disturbances: varicose veins, phlebitis or deep venous dysplasia. Edema associated with chronic venous

insufficiency is the most common type of edema (90%). Like all other types of edema, it is defined by increasing interstitial fluid volume. It differs from other types of edema by association with microangiopathy of the original functional and then organic nature, a consequence of venous stasis that affect endothelium, affects endothelial function and induces severe abnormalities hemoreologic.

These impacts of the tissue are correlated with the initiation of inflammatory processes, involving many chemical mediators, resulting in fibrosis, capillary rarefaction and hypoxia. Edema in chronic venous insufficiency is the first sign of microangiopathy. For this reason, it is classified as grade III CEAP classification. Volumetry, a simple investigation, has become a screening test, routine for this event [4,5].

In most cases, edema is preceded by functional disorders of chronic venous insufficiency, such as: sensation of weight in legs (94% of patients), muscle cramps (70% of patients), sensation of swelling in the member (80%), the sensation of pain (40% of cases).

Originally, edema appears after a longer period of standing, usually at the end of the working day and night is completely reabsorbed. At first it locates in perimaleolar area, then expand on the back foot and lower leg. It is white, painless, soft, leaving the well, quite common in varicose veins.

The affected member has a significant increase in volume. The patient begins to have pain sometimes in the form of nocturnal muscle cramps, which disappear after a massage or different flexion and extension movements. An important sign of varicose edema is sidedness. Most times is moderate and it never takes a swelling of the monstrous character of deep phlebitis or elephantiasis.

#### *Pigmentary and purpuric dermatitis (Favre-Chaix)*

This name is given by Favre in 1924 and is one of the most common skin manifestations of chronic venous insufficiency of lower limbs occurring among the first symptoms of the disease. Most times it is preceded by edema for months and years, but can occur in their absence. It manifests itself as small brown pigmented spots that do not disappear at the vitropressure and marked tendency to conflict making large placards that are not accompanied by subjective symptoms. It has long evolution. Frequently was associated with subacute dermatitis of the area affected with eczema, phlebitis and ulcers. The existence of hemosiderosis in the pigmentary dermatitis can be explained by a local disturbance of acceptance by

the holder iron protein substrate as it is apt to form stable iron set, instable like in other diseases.

#### *Stasis dermatitis (varicose eczema)*

It consists of a rash type in the lower third of the calf that can pass through all developmental stages of eczema (erythema, vesicles, lichenification) accompanied by itching intensified. It can coexist with other clinical manifestations of chronic venous insufficiency, most often varicose ulcers complicate this manifestation [6]. In addition to its pathogenesis venous stasis with impaired microcirculation skin sensitization may occur after topical application or infections. It meets 27% of cases of chronic venous insufficiency and accompanying 20% of varicose ulcers and 24% of postphlebotic ulcers. Eczema is a manifestation of venous stasis and its treatment (sclerosis and elastic retainers) rash heals both the local and disseminated in the absence of any antieczema treatment. Varicose eczema may take all known clinical forms: acute, subacute and chronic.

Between patient age and specific manifestations of chronic venous insufficiency found an increase in their prevalence with age for both men and women.

#### *Varicose dermo-hypodermatitis*

It is manifested by the appearance of nodules, plaques or placards infiltrative with inflammatory aspect of sclera interesting dermis and hypodermis. Most often these lesions are associated with inflammation, swelling and induration, with the prevalence of some of them. In the initial stage, the skin is red, warm, with edema that in advanced stages to become tough, sclera, fascia adherent, assets, and the final atrophic stage, retractable, wood, choke the area affected. Appears as a consequence of chronic venous insufficiency, especially perforating veins, location based strictly insufficient dependent perforante [7].

#### *White atrophy – Milian*

It is encountered more frequently in women, in the form of plates of different sizes white colour. On the surface we found telangiectazia and are surrounded by hyperpigmented areas. Approximately one third of cases are complicated with multiple ulcers, superficial, but very painful and difficult epithelizing.

Histopathology shows epidermal atrophy with dermal sclerosis, infiltration of the conjunctiva of the media, and especially in the arteriolar intima.

#### *Varicose ulcer*

It represents a loss in the dermo-hypodermic favorite location in the lower half of the calf with long development and without a tendency to

spontaneous healing. Is one of the complex problems of modern medicine, the frequency increased, the resistance to treatment, repeated relapses, multiple causative factors and temporary work incapacity that causes prolonged. The first problem that raises a leg ulcer is to establish its etiology. Today the ulcers take a very similar clinical picture, regardless of etiology, and frequently lead to diagnostic confusion. Varicose ulcer is the most common form encountered so any ulceration localized at the legs is labeled as disease [8].

## Conclusions

1. Chronic venous insufficiency is a "borderline" problem between patho-physiology, dermatology, phlebology, surgery, with a special importance by the number of cases, the extended care, disabling capacity, constituted a real public health problem.
2. During this study we followed the evolutionary features of venous ulcer especially in relation to patient age, profession, location of ulceration, focusing primarily on the pathology associated most often play a decisive role.
3. Major complication of chronic venous insufficiency in patients with chronic ulcer study is dominated by the female sex more frequently observed unilaterally reduced the number of cases with white atrophy Milian.

## References

1. Saurat J. H., Grosshans E., Laugier P., Lachapelle J. M. – Dermatologie et infections sexuellement transmissibles, 4e edition, Ed. Masson, Paris 2004
2. Ţolea I. (s. red.), Dermatovenerologie clinică, 2003
3. Bucur Gh. Flebologie practica medicala si dermatologica, 2003; 1 –60
4. Feier V. - Dermato-Venerologie Ed. Amarcord, Timişoara, 1998.
5. V. Pătrascu, Loredana Tănase - Ulcerul venos, etiopatogenie, Rev. Dermato - Venerologie, Nr. 2/2006: 127-37, ISSN 1220/3734
6. Browse NL, Burnard KN. The cause of venous ulceration, Lancet. 1982, 243-245
7. Huriez C, Allart CJ Phlebologie, 1975, 24, 1, 109
8. Carpentier PH, Maricq HR, Biro C, Poncot-Makinen CO, Franco A. Relevance, risk factors, and clinical patterns of chronic venous disorders of lower limbs: A population-based study in France, J Vase Surg. 2004. 40: 650-659.

---

*Correspondence Address: Ion Florea, MD, PhD student, Emergency Clinical Hospital Craiova, Street Tabaci no. 1, 200456, Craiova, Dolj, România; mail: biflorea@yahoo.com*