CHRONIC VENOUS DISEASE CASES AT THE IASI DERMATOLOGY CLINIC

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CHRONIC VENOUS DISEASE CASES AT THE IASI DERMATOLOGY CLINIC (Abstract): Chronic venous disease (CVD) is defined as a disturbance of blood return to the deep venous system, superficial venous system, and communicating (perforating) veins. Once present, CVD persists throughout life, so like heart failure it is nowadays considered “a condition for life”. Severe CVD of the lower limbs is one of the most common medical problems, affecting up to 25% of the general adult population of industrialized countries. Aim: to determine the incidence of CVD among the cases admitted to the Dermatology Clinic of the “Sf. Spiridon” Emergency Clinical Hospital Iasi, CVD incidence by sex, age, area of residence and the main pathogens incriminated in super infection of ulcerative lesions. Material and methods: We did a retrospective study of patients admitted to the Dermatology Clinic of the Iasi “Sf. Spiridon” Emergency Hospital over a five years period. Results: Of the total number of patients admitted to our clinic (9375), 57% were diagnosed with CVD and 26.61% of them were with CEAP 6 class chronic venous insufficiency. There was an approximately equal sex distribution and most patients (44%) were older than 65 years. Conclusions: We did a large epidemiological study of venous disease, based on revised CEAP classification, showing again that it is not only a very important medical problem, with various clinical manifestation and multidisciplinary approach, but also an important issue for health insurance system. Keywords: CHRONIC VENOUS DISEASE, EPIDEMIOLOGY, COMPLICATIONS.

Chronic venous insufficiency (CVI) is not a medical problem exclusive for dermatology, general practitioners, phlebologists, internists also treat patients with this disease. Severe chronic venous disease (CVD) of the lower extremities is one of the most widespread diseases, affecting up to 25% of the general adult population of developing and developed countries (1).

CVI is a common health problem, characterized by symptoms and signs occurring as a result of structural and functional alterations of the veins. Characteristic symptoms are heavy, tired, swollen legs, predominantly nocturnal leg cramps, pain and burning sensation in the leg, and itching. Signs include telangiectasias, reticular veins, varicose veins, edema, and such trophic skin changes as lipodermato-sclerosis, dermatitis, pigmentation, and, in end stages, ulceration (2, 3, 4). On the basis of this clinical symptoms and signs is made the clinical part of the CEAP classification of venous chronic insufficiency. According to CEAP classifi-
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cation venous insufficiency is categorized depending on the severity of signs into 7 classes, C0 to C6, starting with C0 - no visible or palpable sign of venous insufficiency, C1 – telangiectasies or reticular veins, C2 – varicose veins; distinguished from reticular veins by diameter of 3 mm or more, C3 – edema, C4 – changes in skin and subcutaneous tissue secondary to CVD, now divided into 2 subclasses to better define the differing severity of venous disease: C4a – pigmentation or eczema, C4b – lipodermatosclerosis or atrophie blanche, C5 – healed venous ulcer and ending with C6 - varices associated with edema, trophic changes, open chronic leg ulcers. Each of this classes can be subdivided in S – symptomatic or A – asymptomatic. First used in 1994, and revised in 2004, CEAP basis classification is the most important clinical instrument for evaluation of patients with venous chronic disorder, and permits to separate patients with venous disease (C0-C2) from patients with venous insufficiency (C3-C6).

Worldwide, 10-33% of adult women and 10-20% of men have CVI. In the European countries the prevalence is even higher, 20 to 50%. In Romania recent epidemiological studies have shown a prevalence of CVI of 32% (5, 6, 7) in general population.

Factors that hinder venous circulation include: ankylosing arthrites of the knee and leg, plaster casts for lower limb fractures, leg bone malformations, accidental sectioning of lower limb motor nerves, neurological diseases with various motor deficits, oral contraception, etc (8, 9,10). Other important predisposing factors are represented by the association of CVD with cardiovascular diseases, caused and aggravated by alcohol and tobacco use, along with diabetes, obesity and occupations requiring prolonged standing such as: barber, cook, dentist, waiter, housekeeper, and last but not least sedentary life by lack of exercise, walking, outdoor physical activities (8,9,11). Aggravating factors are local infection, local allergy, and autoimmune factors (autoantibodies: against connective tissue, against vessel).

Pathophysiologically, the main deficiency leading to ulcerations and accounting for the difficulties encountered in their healing is the inability to adequately oxygenate tissues. It is an anoxia in a leg with adequate arterial flow. In addition, there is capillary thrombosis developed as a result of stasis, with permanent capillary loss. When the process is slow local fibrosis and sudden necrotic ulceration do occur. Sometimes, on the background of impaired oxygenation, infections or allergic processes develop, which can lead to ulceration if are not treated on time (2, 8, 10, 11, 12).

MATERIAL AND METHODS

This is a retrospective study of 5380 patients admitted to the Dermatology Clinic of the Iasi "Sf. Spiridon" University Emergency Clinical Hospital over a period of five years (January 1, 2009 – December 31, 2013) who met the diagnostic criteria for chronic venous disease. The aim of this study was to determine the incidence of CVD among the cases admitted to the Dermatology Clinic Iasi, the percentage of patients seeking medical attention by CVD stage, CVD incidence by sex, age, and area of residence, predisposing factors, and the proportion of patients in the various CVD classes according to revised CEAP basic classification.

In the patients diagnosed with CEAP class 6 CVI the discharge from ulcer surface was tested bacteriological to determine the degree of colonization of ulcerative lesions by pathogenic microorganisms and their sensitivity/resistance to antibiotics.
RESULTS

Of the 9,375 total number of patients admitted to our clinic over the study interval, 57.38% (5,380 patients) were diagnosed with CVD (fig. 1).

The percentage of patients hospitalized for CVD is significantly higher than patients hospitalized for other pathology - t calculated is 20.5 higher than t tabulated for p 0.001. Relative risk (RR) calculated for patients in the study is 1.2219 (95% CI: 1.1969 to 1.2474), with a z statistic of 19.04.

A surprising thing is that throughout the study only 13 patients with CVD class 1 were diagnosed, suggesting that this common disease, with severe consequences, is under diagnosed in the early stages, when preventive measures, hygiene/dietary measures have maximum effect on disease course (fig. 2).

From all the patients included in the study, CVD CEAP class 3 was the most common (2,089 patients, 38.83%), followed by CVI classes 6 with 1432 patients (26.61%) CVI class 4 with 1132 cases (21.04%), respectively.

The distribution of the patient by CEAP stage is almost the same in the years that we study, the number of cases being around the medium value of all cases introduced in our study (fig. 3).
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In absolute numbers, of a total of 9,375 patients hospitalized during the study interval, 5,380 had CVD in different stages, of which 1432 CEAP class 6, accounting for 15.37% of all admitted patients in the Dermatology Clinic in the studied period (fig. 4).

According to new CEAP classification, from the total number of 5380 patients diagnosed with chronic venous disorder, 598 patients (11.12%) were with chronic venous disease and 4,782 patients (88.88%) with venous chronic insufficiency. As we can see the distribution of patient in venous chronic disease and insufficiency is mainly in the group of venous chronic insufficiency, showing that the prophylactic measures, dedicated to patients in venous disease, for preventing the evolution of pathophysiological changes that lead to irreversible changes in the venous system and the installation of the venous insufficiency are insufficient.

In our study the distribution of patient by sex shows approximately equal rates, although data in the literature show an increased rate of chronic venous disease among female patients (fig.5). Worldwide, 10-33% of adult women and 10-20% of men have CVI. In European countries the prevalence among women is even higher, ranging from 20 to 50% (4, 5, 6, 8).

According to the area of residence, most patients (56%) came from rural areas, probably accounted for by their lifestyle, and also by a delay in seeking medical attention in the early stages of disease, inadequate implementation of primary prevention methods, methods that overlap with general public health education, our data being consistent with the literature data.

As to age group distribution, most patients (44%) were older than 65 years, followed by age group 46-65 years (37%), and...
15-45 years (19%), our data being consistent with the literature (fig. 7).

The following predisposing and aggravating factors were identified: genetic predisposition, history of vein thrombosis, obesity, smoking, diabetes, etc.

Given the data resulting from the epidemiological study and their distribution by clinical forms of the disease according to CEAP staging, we focused on patients with CVD CEAP class 6, patients with severe complications, with a major impact on their quality of life, but also on the costs for the healthcare systems, which are being very high.

One of the serious complications of CVD CEAP class 6 is the infection of ulcerative lesions with various pathogens. In descending order of frequency, the main pathogens incriminated in ulcer infections were *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and methicillin-resistant *Staphylococcus aureus* (MRSA), order maintained throughout the 5 years of study (fig. 8).

Referred to resistance to antibiotics, gentamicin comes first, followed by ciprofloxacin and amoxicillin with clavulanic acid, because of topical and systemic antibiotic abuse, which is a worldwide problem. However, in our study ciprofloxacin proved to be the most sensitive (fig. 9), followed by colistin and teicoplanin (fig. 10).
RESULTS AND DISCUSSION

Data from the present study indicate that chronic venous disorder still raises a serious problem for the healthcare system, even exist a lot of programs dedicated to this disease. Namely, it appears that many patients do not seek medical attention when the disease is in early stages (most patients presenting with classes 3 and 6 according to CEAP classification). The distribution of patients by CEAP classes shows a distribution of the patients mainly in the venous chronic insufficiency (88.88%). Distribution by gender and area of residence was uniform, unlike the worldwide statistical data according to which the disease is more common in females, with a predominance of patients originating from rural environment.

People over the age of 65 were most frequently affected, followed by age groups 46-65 and 15-45 years.

Worrying is the small percentage (11.12%) of patients diagnosed in stage 1 of disease, and also in the group of venous chronic disease (CEAP0-2), these patients being those who can benefit the most from preventive methods, a proper lifestyle, measures that determine a slow progression to advanced disease, and preserve the patient quality of life and ability to work. If prevention programs should be entered correctly if patient education as one of the main goals of primary health care, then we could tip the balance toward those with chronic venous disease.
The main pathogens isolated from ulcerative lesions were *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and MRSA, agents that show resistance to common antibiotics due to their improper use.

**CONCLUSIONS**

The venous chronic disorder is one of the most common health problems meet in clinical practice, not only in dermatology, but also in general practice, family medicine, internal medicine, cardiology, vascular surgery etc. It is an important problem for the healthcare system because of the very high costs associated with long hospital stay. As this study shows, these problems can be reduced by proper preventive measures, by early identification of the CVD, by correct treatment introduced from the very first stages of the disease.

Detection in early stages, regular and thorough check-ups in patients with genetic predisposition, is the first steps to reducing the incidence and prevalence of CVD in the general population. These issues can be positively influenced by effective prevention methods implemented in the early stages of the disease and by patient education and training.

CVD is currently a very important medical problem that requires multidisciplinary approach (family medicine, dermatology, surgery, internal medicine, etc.), in the literature being regarded as the second most common condition after arterial hypertension among cardiovascular diseases. As the study shows, the prophylaxis and correct treatment of patients in early stages can reduce the percent of patients with chronic venous insufficiency, having a positive impact in the hospitalization rate and costs for the healthcare system.

**REFERENCES**

FIBROMUSCULAR DYSPLASIA OF CARDIAC CONDUCTION SYSTEM ARTERIES IN
TRAUMATIC AND NON-NATURAL SUDDEN DEATH VICTIMS AGED 0 TO 40 YEARS:
A HISTOLOGICAL ANALYSIS OF 100 CASES

Luminal narrowing by fibromuscular dysplasia of the sinus and/or AV-node artery was found in examinations of unexplained deaths and, in many cases, was considered as the cause of death. There are no data on the frequency of fibromuscular proliferations of arterial walls in heart healthy control groups. In numerous case reports, histological evidence of fibromuscular proliferations of arteries of the cardiac conduction system has been suspected as the cause of death when the autopsy and additional investigations could not determine another cause. Cardiac arrhythmia due to ischemia is proposed to be the lethal pathomechanism. While there is an uniform nomenclature for fibromuscular dysplasia as a disease entity of noncardiac arteries, there are several terms for fibromuscular proliferations of cardiac arteries that are only microscopically detectable, e.g., “fibromuscular hyperplasia”, “occlusive lesions of cardiac conducting tissue arteries”, and “small coronary artery disease”. All of the described alterations of the vessel walls appear as a fibromuscular dysplasia. However, systematic histological investigations have rarely been described. For many forensic pathologists and pathologists, it was clearly evident that fibromuscular proliferations of arterial walls are widely spread in a healthy age group of 0 to 40 years. The assessment of the histological findings in cardiac arteries as a cause of death has to be seen critically since functional causes might also be responsible. Furthermore, the diagnosis of “fibromuscular dysplasia of coronary arteries” should not be confirmed without a macroscopic finding. Since fibromuscular proliferations of arteries of the cardiac conduction system and small coronary arteries occur in 84% in an obviously heart-healthy control group (n=100), these findings should be known to every (forensic) pathologist and anatomist. This might reduce the risk of misdiagnosis. The cause of these fibromuscular vessel alterations is still unclear. Possible hypotheses might be either the consequence of the impact of the bloodstream on small vessel branches or a protective mechanism against luminal extension. The term “fibromuscular dysplasia” should not be used for a thickening of coronary arterial walls that can only be seen microscopically. In addition, Zack et al proposes the establishment of a specific nomenclature for such changes (e.g., fibrous and muscular proliferation of arterial wall tissue) (Zack F, Kutter G, Blaas V, Rodewald AK, Büttner A. Fibromuscular dysplasia of cardiac conduction system arteries in traumatic and non-natural sudden death victims aged 0 to 40 years: a histological analysis of 100 cases. Cardiovascular Pathology 2014; 23: 12–16.

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