

Incidence of Peripheral Venous Insufficiency in Nursing Professionals Community-Verified Icon

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Incidence of peripheral venous insufficiency in nursing professionals

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Abstract

Introduction: Peripheral venous insufficiency has an approximate prevalence of 60 % in nursing professionals.

Objective: To estimate the incidence of peripheral venous insufficiency among nursing professionals of the Provincial Pediatric Teaching Hospital “Dr. Edward Agramonte Pineapple”.

Methods: An observational, descriptive and cross-sectional study was conducted in the Provincial Pediatric Teaching Hospital “Dr. Eduardo Agramonte Piña” of Camagüey during the first half of 2022. The universe consisted of 272 nurses and the sample remained conformed by the 154 who met the selection criteria. The variables studied included: sex, etary group, referred symptoms, developed clinical signs, modifiable and non-modifiable risk factors, and measures used to prevent disease progression. The study was approved at the Scientific Council, the Ethics Committee of the Hospital and the principles of the Declaration of Helsinki were taken into account. The data were expressed in quantity and percentage.

Results: There was a predominance of the female sex (98.1 %), the etary group 50-59 years (43.5 %), and, as main signs, fatigue (55.8 %) and telangiectasia (72.2 %). Prolonged bipedestation (92.9 %) resulted in the prime modifiable risk factor, while arterial hypertension presented in non-modifiable (33.8 %). The 40.3 % referred to the use of compression stockings to prevent disease progression.

Conclusions: A high incidence of varices in female, elderly nursing personnel associated with occupational risk factors such as prolonged bipedalism and sedentary lifestyle was determined.

Key Words: varices; nursing staff; risk factors

Introduction

Peripheral venous insufficiency (PVF) is an affection in which the veins are unable to send blood from the lower extremities to the heart, and whose main symptoms range from the mildest to the most severe form. It is characterized by pain, heaviness, fatigue, burning on the soles of the feet, intense pruritus, cramps in the calves, dermatitis, varicorrugia, venous ulcers, chronic venous and lymphatic edema, skin and subcutaneous cell tissue infections, in addition to thrombophlebitis superficial or deep, which can cause a pulmonary embolism and bring as a consequence death [1,2].

Peripheral vascular diseases maintain their vigor as a health problem in the global scope, as they continue to occupy one of the top 10 places as a fundamental cause of death; in addition to constituting the major cause of disability and of non-traumatic amputation [3].

In industrialized countries the prevalence varies between 20 % and 60 %, making it one of the most costly diseases, both on the medical and social planes, by causing loss of working days due to the disability it produces [4].

This circulatory disorder affects many people in the world, including nursing professionals, due to the specific characteristics of their work activity and unhealthy lifestyle [1,4].

The World Health Organization (WHO) in 2012 determined that around 60 % of nurses suffered from venous insufficiency in lower limbs [1].

In other occupations some factors have also been described which increase the chance of presenting varices, when remaining for long periods in bipedestation; such is the case of carpenters, cooks, housewives, among others [5,6].

Factors associated with this disease are advanced age, family history of varicose veins, obesity, multiparity, use of oral contraceptives, prolonged orthostatism and history of lower extremity trauma; in addition, some diseases such as diabetes mellitus, arterial hypertension, chronic constipation, nephropathies, cardiopathies, and phlebitis. Several authors also make mention of the use of certain garments that decrease venous return

or increase intra-abdominal pressure such as bandages, garters, and garments; and ambient or workstation heat, due to the inhibitory action of the venoconstrictive sympathetic endings of superficial veins by elevated temperatura [1,6,7].

As preventative measures to prevent accelerated disease progression scientists recommend avoiding overweight with a proper diet, which includes vegetables, dietary fiber and drinking two liters of water a day; engage in daily physical exercise, such as walking and bicycle riding; in bed raise the feet 15 centimeters using a pillow or cushion; and perform leg massages periodically from ankle to thigh. Fried foods, sweets, alcohol, excessive salt intake, heat sources, tight fitting clothing or footwear, spending too much time sitting or standing, and high heels or flat shoes should be avoided. The ideal results in a footwear with about 3 or 4 centimeters of heel [8,9].

Studies reveal that varicose vein is inversely proportional to economic development since in countries of Asia, Africa, Oceania and Latin America the prevalence shows minimal compared to developed ones [7,10].

The frequency of chronic venous disorders varies in different populations from 5 % to 30 % globally. According to a study conducted in Japan by Kohno et al (cited by Lopez),[11] the estimated percentages are 50 % for women and 14 % for men.

The incidence in the United States is estimated between 10 % and 35 % of the adult population, which is affected by varicose ulcer up to 4 % [12]

A multicenter study conducted by the Colombian Society of Angiology (SAC) demonstrated that the prevalence of venous disease fluctuated between 10 % and 22 % [13]

In Cuba there are very few studies on the prevalence of this disease. In 2005 in a research conducted by Gallardo et al [14] it was found that 1.6 % of the deaths occurred that year corresponded to peripheral vascular diseases, which occupied the sixth place within the top ten causes of death in the Cuban population.

The incidence of varicose diseases is increasing due to aging populations and poor lifestyle habits developed countries have established, such as sedentary lifestyle, smoking and obesity. It has to be added that these originate a heightened consumption of healthcare resources and a significant decrease in the quality of life of these patients.

Taking into account the prevalence of venous disorders in the general population and in particular in the nursing staff of the Provincial Pediatric Teaching Hospital “Dr. Eduardo Agramonte Piña”, as well as the scarce studies that exist in this regard, the present research was conducted with the

aim of estimating the incidence of peripheral venous insufficiency of nursing professionals working in the institution, in order to obtain the necessary tools for their prevention and act on the modifiable risk factors.

Methods

An observational, descriptive and cross-sectional study was conducted at the Provincial Pediatric Teaching Hospital “Dr. Eduardo Agramonte Piña” of Camagüey during the first half of 2022 (January-June). Of the 272 nurses with whom the institution counts (252 women and 20 men), 59.9 % of females and 15 % of males manifested the pathology in question, which represented a sample of nurses (154) with diagnosis of varicose disease due to angiopathy, who met the research selection criteria, upon remaining occupationally active, with a track record of ten years or more in the sector, present IVP subsequent to the start of working life and give their willingness to participate in the research, prior informed consent.

The variables studied included: sex, etary group, referred symptoms, developed clinical signs, modifiable and non-modifiable risk factors, and measures used to prevent disease progression.

The survey constituted the primary record of information; for the secondary, the staff database, facilitated by the head of nursing, was used. For the processing of the data the Statistical Package for the Social Sciences (SPSS), version 26.0 was employed on Pentium computer V. Quantity and percentages were obtained as summary measures, while the results were presented in tables and figures.

The study was approved by the Scientific Council and Ethics Committee of the hospital. The confidentiality of the data was maintained through the coding of the variables, accessible only to the researchers. The information obtained was not used for purposes other than the research and the principles of the Declaration of Helsinki were followed [15].

In the context of the research there is talk of “prolonged bipedalism”, which is considered the time over four hours spent by the worker standing and quiet or with short shifts [16] of “sedentarism”, when not performing enough physical activity according to what is recommended for the age and condition of each person [17] and of “intense physical activity,” which requires a large amount of effort and provokes rapid breathing with a substantial increase in heart rate [18].

Results

In table 1 the total number of nurses with peripheral venous insufficiency according to sex and etary group is represented. Preponderance of females is observed in 98.1 % of the cases, while etary group between 50 and 59 years contributed the most significant value (43.5 %).

Grupo etario (años)	Sexo				Total	
	Masculino		Femenino			
	Cantidad	%	Cantidad	%	Cantidad	%
20-29	0	0	7	4,6	7	4,6
30-39	0	0	19	12,3	19	12,3
40-49	1	0,6	28	18,2	29	18,8
50-59	2	1,3	65	42,2	67	43,5
60 y más	0	0	32	20,8	32	20,8
Total	3	1,9	151	98,1	154	100

Table 1 - Distribution of the total number of nurses with peripheral venous insufficiency, according to sex and etary group

The symptoms referred by nurses suffering from peripheral venous insufficiency are related in Figure 1, where predominance of fatigue, sensation of heaviness and pain is shown.

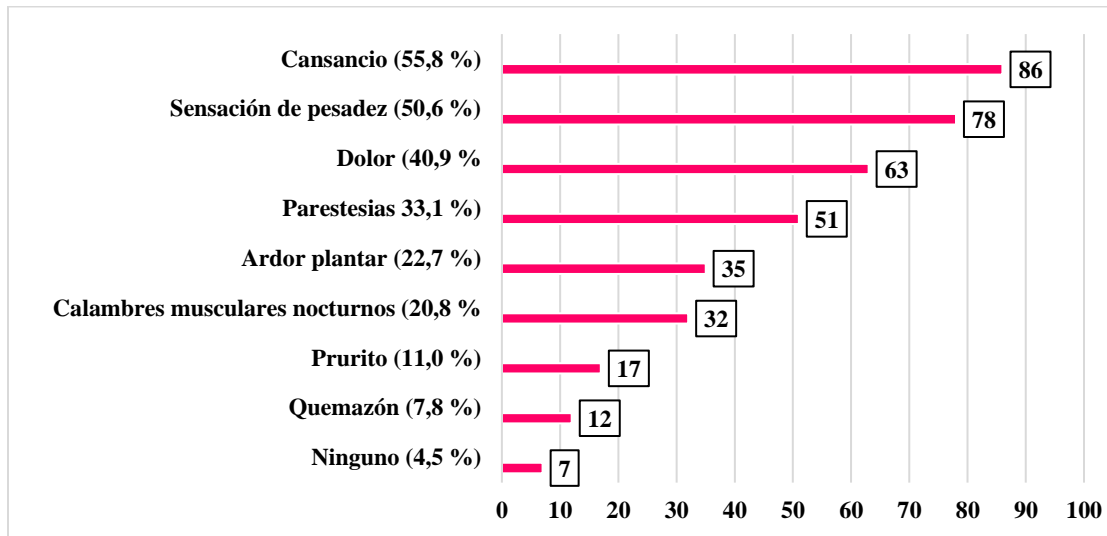


Figure 1: Distribution of the total number of nurses suffering from peripheral venous insufficiency, according to referred symptoms.

Note: Figure 1 is not total because several nurses referred to more than one symptom; nonetheless, the percentage was obtained in relation to the 154 professionals studied.

Source: Survey.

In terms of the total number of nursing professionals suffering from peripheral venous insufficiency, attending to developing clinical signs (fig. 2), higher figures were shown in telangiectasia, edema, and in dilated and tortuous veins.

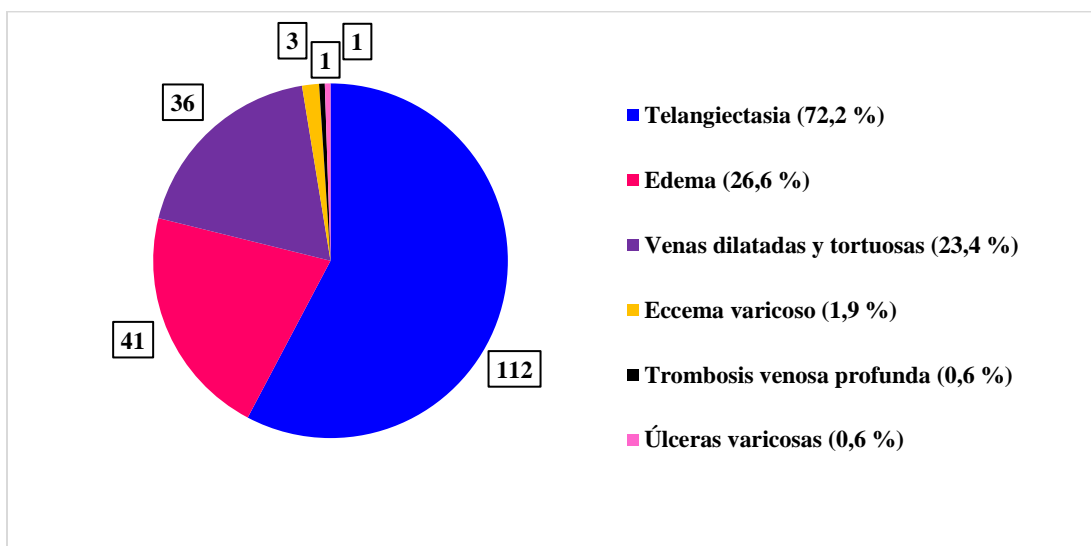


Figure 2 - Distribución del total de enfermeros que padecen insuficiencia venosa periférica según signos clínicos desarrollados.

Note: Estos signos clínicos desarrollados no suman en su totalidad el 100 %, debido a que un mismo enfermero ha presentado o presenta varios. Además, el porcentaje se calculó en correspondencia con la muestra (154).

Fuente: Encuesta.

The risk factors in nurses diagnosed with peripheral venous insufficiency are analyzed in Figure 3. Prolonged bipedalism, sedentarism and cross-legged sitting constituted the main modifiable causes; in so far as arterial hypertension, diabetes mellitus and family history of varicose veins figured within the non-modifiable factors.

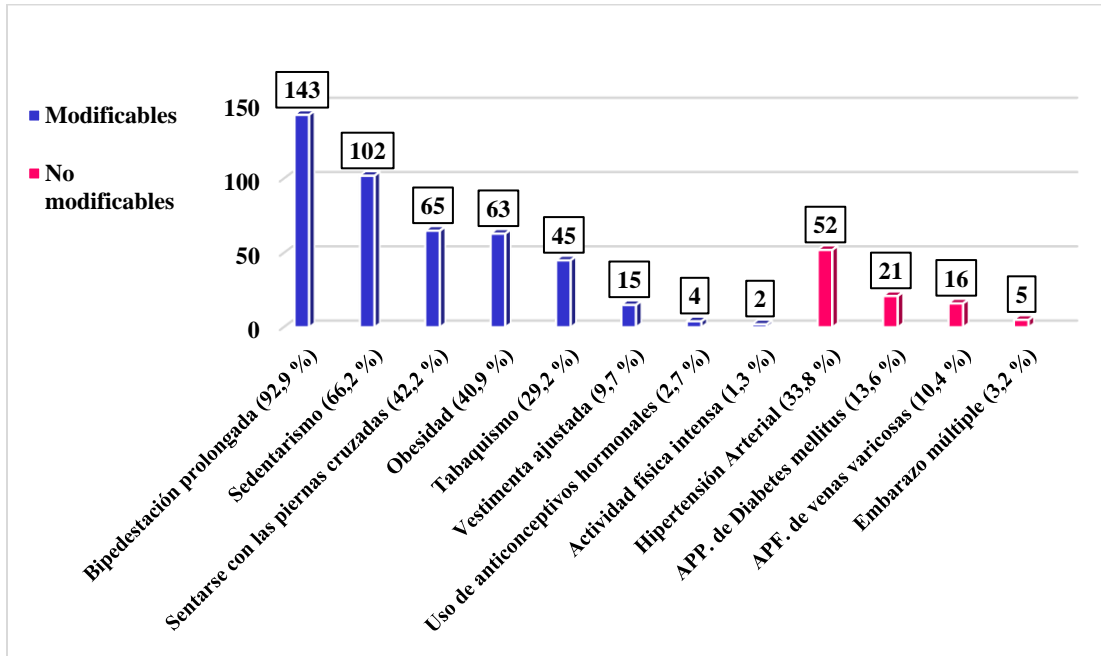


Figure 3 - Distribution of the total number of nurses with a diagnosis of peripheral venous insufficiency, according to modifiable and non-modifiable risk factors.

Note: The calculated percentage was effected according to the total number of nursing professionals study objects (154). 100 % was not obtained in the summation of the risk factors, because one nurse presented several causes.

Caption: APP - Personal pathological background; APF - Family pathological history. Source: Survey.

Figure 4 relates the nurses according to the measures taken to prevent the progression of peripheral venous insufficiency, using appropriate stockings and comfortable footwear, while others implemented the practice of non-forced exercise.

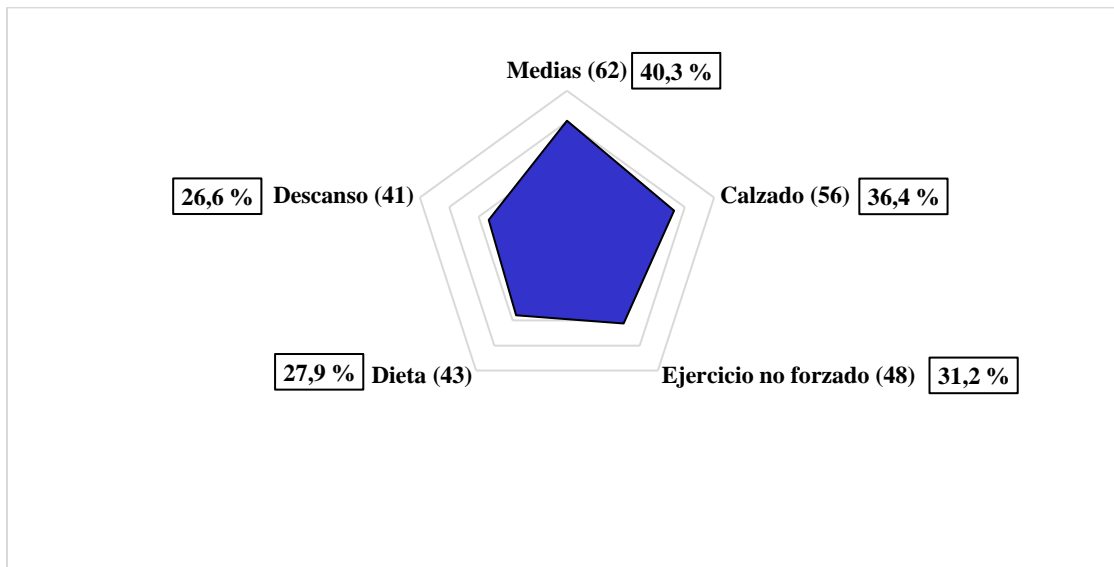


Figure 4 : Distribution of the total number of nurses with a history of peripheral venous insufficiency according to measures used to prevent its progress.

Note: In Figure 4 the same measurement is attributed to several nurses, which generates a total different from 100 %, even when those represented have been calculated based on the sample total (154).

Discussion

In this investigation a high prevalence of peripheral venous disease has been determined in the nursing staff, with an elevated percentage of women, whose results agree with those reported by Vázquez et al (1) in a second level Mexican hospital. In the article by Ávalos et al (4) a considerable figure of professionals with this affection – mostly women between the fourth and fifth decades of life – is also evident. Pérez and Narváez [19]. in Nicaragua obtained a preponderance of females in the etary group between 50 and 59 years, results that agree with them. The nursing profession was predominantly female; as such, their staff showed greater likelihood of presenting peripheral venous insufficiency. The characteristics of professional performance increase that risk, therefore, and in accordance with the observed percentages, this health problem should be considered an occupational-type disease.

Vázquez and others(1) found fatigue in the studied population, followed by sensation of heaviness, pain in the legs and paresthesias as the most frequently referred manifestations. Similar results were achieved in the present research.

Several studies report on pain and cramps as predominant symptoms in nursing professionals suffering from peripheral venous insufficiency, whereas, in the data observed in this analysis, fatigue and sensation of heaviness constitute the fundamental manifestations, which is inconsistent with that reported in the aforementioned investigations [1,19,20].

Attending to clinical signs, telangiectasia and edema prevailed, which was related to the findings of an investigation conducted in Peru [21] For their part, Dimas and others [22] identified edema, and dilated veins and tortuous.

When standing for prolonged periods of time, the veins have to work much harder to pump blood to the heart; likewise, the prolonged lack of exercise, known as “sedentarism” or “sedentary life,” incides in the organic functions, which begin to deteriorate. The hemodynamic consequence is going to be the loss of calf muscle pumping capacity with the restoration of a return difficulty. This data remains proven from what is studied here [5,12].

It converges with various researchers who have pinpointed as prime causes of peripheral venous insufficiency in nurses, prolonged bipedestation and sedentarism [23,24].

Increased hydrostatic pressure during prolonged bipedestation results, according to Alborno, [10]. the main modifiable risk factor favoring the presentation of peripheral venous insufficiency in nursing personnel.

Nicaraguan researchers collected the history of diabetes mellitus in a high percentage of nursing professionals suffering from varicose disease, so it was obvious the relationship that both can hold. This corresponds with the results obtained [19]

Arterial hypertension and diabetes mellitus constitute non-modifiable risk factors in the occurrence of varicose veins, which provokes a decrease in blood vessel diameter and brings as a consequence a lower oxygen uptake. Due to this, the valves have more difficulties pumping hard and carrying the blood to the heart, so this gets retained in the veins [3,9,25]

The surveyed nurses have high knowledge about venous insufficiency and its preventive measures; however, they rarely put it into practice [20].

In a research conducted in Chile a high percentage of professionals studied did not use preventive measures to prevent the occurrence of varicose síndrome [26]

The research will not only focus on determining the characteristics presented by nurses with peripheral venous disease; also, starting from this initial diagnosis, two more in-depth studies, one relational and one of cases and controls, will be conducted that will allow measures to be adopted that benefit professionals, sheltered by scientific results.

The main limiting factor during the reporting of such research consisted in the paucity of studies on the subject, both in the national and international scope.

It is necessary to emphasize the results obtained here regarding preventive and corrective measures, which indicate that the nursing union does not carry them out, which should be taken into consideration, as this may influence the increase in prevalence in an future and represent a labor problem.

Finally, a high incidence of varices in female, older nursing personnel associated with occupational risk factors such as prolonged bipedalism and sedentarism was determined.

It is recommended to apply health promotion with emphasis on the prevention of risk factors, as well as to conduct relational level studies that allow to establish associations between the characteristics found and the occurrence of varices.

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