MEDICAL CHANNEL

Original Article

GENDER DISTRIBUTION AND FREQUENCY OF FACTORS LEADING TO VARICOSE LEG ULCERS

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ABSTRACT

Objective: To determine the gender distribution and frequency of factors leading to varicose leg ulcers.
Study design: Cross sectional study.
Setting: The study was conducted at departments of Dermatology, Vascular surgery and Surgery, Dow University of Health Sciences & Civil Hospital, Karachi.
Duration of study: Six months from 13-01-2010 to 12-07-2010.
Subjects and methods: Seventy eight patients were included who fulfilled the inclusion criteria after taking the informed consent. The SPSS version 10.0 was applied to the data.
Results: There were 53 (67.95%) males and 25 (32.05%) males.
The mean±SD age of patients was 51±13 years. The overall mean age at CVD onset was 33±13 years, with 37±13 years (range 15–72) for males and 31±11 years (range 16–72) for females.
Varicose veins were the cause in 46 (58.97%) [32 (41.02%) in males and 14 (17.95%) in females] patients and deep vein thrombosis was the cause in 32 (41.02%) [21 (26.9%) in males and 11 (14.10%) in females].
Conclusion: Varicose vein was the commonest factor leading to varicose leg ulcers, whereas, deep venous thrombosis was present in most of the limbs with varicose leg ulcers.

Key words: Varicose veins, varicose leg ulcers, deep vein thrombosis.

INTRODUCTION

The word "ulcer" means a break in layer of cells forming a surface. Leg ulcer denotes skin loss on leg or foot due to any cause. Leg ulcers can be due to arterial diseases or venous problems. Varicose leg ulcers are the results of chronic venous insufficiency in which there is improper functioning of one way valve in veins. This results in pooling of blood around the lower part of leg just below the ankle (which is the commonest area of venous ulcer-"gaiter area''). Almost half of all varicose ulcers are associated with deep vein valvular incompetence, while the remainder results from improper function of valves in connecting veins (which connect deep veins to superficial).

Certain risk factor have been linked with the development of varicose leg ulcers for example female gender, smoking, presence of varicose veins and deep venous thrombosis. A study by Robertson and colleagues showed that history of varicose veins was found in 48% and deep venous thrombosis was found in 28% of patients with varicose leg ulcers ($p<0.01$), 64% patients were smokers.

Another study in USA shows overall incidence of varicose veins of 0.76 for men and 1.42 per 100 persons/year for women. Clinically varicose leg ulcers present with dull aching pain when infected, heaviness of leg, darkly pigmented, leg swelling and weeping scaly lesion. A local study conducted in Rawalpindi showed that major causes of ulcer in females were deep vein thrombosis 55.56% and in males' varicose vein was a predominant cause 84.09%. Community survey in North America suggests an overall

incidence of about 0.2%. Long-term therapeutics is needed to heal venous ulcers and recurrence is quite common, ranging from 54 to 78%.

Rationale: Varicose leg ulcers are a significant cause of morbidity. The purpose of the study was to determine the gender distribution and the frequency of factors leading to varicose leg ulcer, so that a plan could be made for prompt management which can decrease the overall incidence of varicose ulcers.

MATERIAL AND METHODS

Study design: Cross Sectional Study.

Setting: The study was conducted in the following wards of Civil Hospital, Karachi, with the consent of head of departments. Wards included:

a) Dermatology ward, Civil Hospital Karachi.
b) Vascular surgery ward, Civil Hospital Karachi.
c:) Surgical wards, Civil Hospital Karachi.

Duration of study: Six months from 13-01-2010 to 12-07-2010.

Sample technique: Non-probability consecutive.

SAMPLE SELECTION

Inclusion criteria:

Consecutive patients of either gender having age >18 years with varicose leg ulcers (as defined in operational definition), who were willing to give informed consent were included in the study.

Exclusion Criteria:

1. Leg ulcers due to diabetes mellitus, vacuities.
2. Neuropathic (loss of sensation in lower legs) ulcer.
3. Leg ulcer due to primary infections (like bacterial infection, tuberculosis).

Data Collection procedure: Patients admitted in the wards with the diagnosis of varicose leg ulcers were enrolled in the study. Informed consent was taken from all patients and approval of ethical committee was taken as well as permission of head of departments of wards were taken. Detailed clinical history and examination of varicose veins and varicose ulcers was performed by primary investigator. Colour Doppler ultrasound was performed by radiologist at Civil Hospital Karachi (with the experience of 5 years) for deep vein thrombosis and varicose veins. Presence and absence of these factors was labelled as per operational definition. All demographic variables, gender distribution and risk factors leading to varicose leg ulcers were entered in preforms (See attached preforms) by the researcher.

Data Analysis: The collected data was entered and analyzed with the help of SPSS program version 13.0. Descriptive Statistics was used for summarization of categorical variables like gender, deep vein thrombosis and varicose veins presented in frequency and percentages. Mean and standard deviation was calculated for age of patient and duration of leg ulcer. Effect modifier was controlled through stratification of age and duration of disease.

RESULT

Patients were selected from the in-patient department of dermatology, departments of vascular surgery and general surgery after taking the informed consent. Seventy eight patients with varicose leg ulcers were included in this study, which fulfilled the inclusion criteria.

On gender analysis we found that there were 53 (67.95%) males compared to only 25 (32.05%) females (Table I).

The mean±Standard deviation (SD) age of patients was 51±13

TABLE I
GENDER DISTRIBUTION

Gender	No. of patients	Frequency
Male	53	67.95%
Female	25	32.05%
Total	78	100%

TABLE II
AGE OF STUDY POPULATION

Mean	SD	Range
51 years	13 years	18–83 years

TABLE III
AGE OF STUDY POPULATION AT THE DIAGNOSIS OF CHRONIC VENOUS DISEASE

Mean	SD	Range
33 years	13 years	15–72 years

TABLE IV
AGE DISTRIBUTION ACCORDING TO GENDER AT THE DIAGNOSIS OF CHRONIC VENOUS DISEASE

Gender	Mean±SD	Range
Male	37±13 years	15–72 years
Female	31±11years	16–72 years

TABLE V
RISK FACTORS FOR VARICOSE LEG ULCERS

Risk factors	No. of patients	Frequency
Varicose veins	46	58.97%
Deep vein thrombosis	32	41.03%
Total	78	100%

TABLE VI
RISK FACTORS FOR VARICOSE LEG ULCERS ACCORDING TO GENDER

Risk factors	Male	Female	Total
Varicose veins	32 (41.02%)	14 (17.95%)	46 (58.97%)
Deep vein thrombosis	21 (26.9%)	11 (14.10%)	32 (41.03%)
Total	53 (67.95%)	25 (32.05%)	78 (100%)

PICTURES XII V
ARICOSE LEG ULCERS AT LEFT LEG



PICTURE XIII
VARICOSE LEG ULCERS AT RIGHT ANKLE



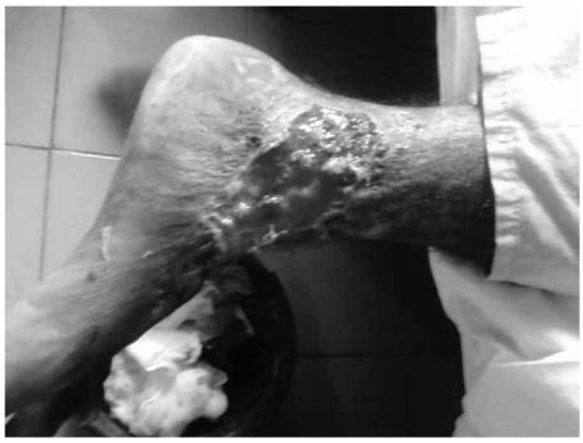
PICTURE XIV
VARICOSE LEG ULCER AT LEFT ANKLE AND FOOT



PICTURE XV
VARICOSE LEG ULCER AT LEFT ANKLE



PICTURE XVI
VARICOSE LEG ULCER AT RIGHT ANKLE



years. (Range 18–83 years) (Table II). No significant age difference was observed between the genders. The overall mean age at CVD onset was 33±13 years (range 15–72) (Table III), with 37±13 years (range 15–72) for males and 31±11 years (range 16–72) for females (Table IV).

Varicose veins were the cause in 46 (58.97%) [32 (41.02%) in males and 14 (17.95%) in females] patients with varicose leg ulcers and deep vein thrombosis was the cause in 32 (41.03%) [21 (26.9%) males and 11 (14.10%) females] (Table V & VI).

DISCUSSION

Varicose veins without skin changes have a prevalence of approximately 20% in Northern and Western Europe whereas advanced chronic venous insufficiency affects about 3% of the population. Genetic risk factors are thought to play an important role in the etiology of both these chronic venous diseases (CVD). In our study the mean age was 51 years as compared to the in a study by Tassiopoulos AK, et al mean age was 59 years.

In a study by Chaby G et al there were 62% females and 38% males as compared to this in our study 67.95% males and 32.02% females.

Tassiopoulos AK, et al in his study found that deep vein thrombosis was the risk factor in 32% of varicose leg ulcers. As compared to this deep vein thrombosis was the cause in 43.6% of varicose leg ulcers in our study.

In our study varicose veins were the cause in 58.97% (41.02% in males and 17.95% in females) patients with varicose leg ulcers. In a study by Komsuoðlu B, et al VV was 36.7% (14.6% in males and 22.1% in females).

In a study by Fiebig A et al it was reported that the mean ascertainment age of our patients was 56.2 years [standard deviation (SD) 11.1 years, range 18–83 years]. No significant age difference was observed between the two sexes. The overall mean age at CVD onset was 32.6 years (SD 12.2, range 5–72), with 36.8 years (SD 12.8, range 5–72) for males and 30.8 years (SD 11.3, range 6–72) for females.

In most studies undertaken so far, venous leg ulcer has been found to be more prevalent among women than among men (Rabe et al. 2003), although this difference was only small in a recent study by Labropoulos (2003). In a study twice as many patients were female (n = 1,904, 70.5%) than male (n = 797, 29.5%) thereby highlighting the CVD-predisposing role of the female sex. In contrast to this our study population was predominant by males having 67.95% males as compared to this there were only 32.05% females.

The reasons for the observed sex difference may be manifold. Clearly, women are more likely to seek medical attention for varicose veins and are about three times more likely to undergo treatment (Madar et al. 1986). However, a remarkable sex difference was also observed in our data in terms of the mean age at disease onset, with females showing first symptoms of CVD at 30.8 years of age, compared to 36.8 years for males, and in terms of disease duration (19.3 years for males, 25.1 years for females). The higher proportion of female CVD patients consistently noted in previous reports may thus be at least partially explicable by a different timing of disease in the two sexes.

Obesity has been noted to be an additional risk factor for CVD (De Backer 1997; Fowkes et al. 1999).

Many studies considered BMI to be more important in females than in males (De Backer 1997; Fowkes et al. 1999). Estimates from one population do not necessarily reflect the heritability of the same trait in another population (Visscher et al. 2008). Therefore, future studies are required to clarify whether our gender distributed estimate is indeed representative of CVD in general.

CONCLUSION

Varicose leg ulcers were more common in males. However DVT was found less commonly than varicose veins as the cause of varicose leg ulcer. But most DVT occurs in patients having varicose veins so in one or another way both are interrelated.

So we concluded that patients with varicose veins should always be looked for DVT by going through simple ultrasound color Doppler and should be treated accordingly.

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