

Disease Characteristics of Chronic Venous Disease in Referral Hospital in Bangladesh

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Abstract:

Introduction: Chronic venous disease (CVD) is widespread, underdiagnosed, and can progress to chronic venous insufficiency and venous ulcer, which can require extensive treatment. This condition negatively impacts patient quality of life and place substantial burdens on healthcare resources. In Bangladesh this problem is increasing with very poor awareness.

Materials and Methods: The prospective observational study was carried out in department of vascular surgery of National Institute of Cardiovascular disease. We randomly choose 180 patients with chronic venous disease (CVD) and evaluate their characteristics and prevalence of several types. Data collection started from May 2021 for next 6 months.

Results: The patients of this survey were aged between 24 to 70 years and the Mean±SD age was 43.6±12.2. 78.3% of total study population were male, 33.3% were businessman and 10% were housewife.

66.6% patients were having low socio-economic condition. C2 varicose veins were highly prevalent among the study population (35%) & lowest prevalence of C4b lipodermatosclerosis or atrophie blanche (11.7%) we have seen in the study. (31- 40) & (51-60) these two age group were more prone to have CVD, 28.33% (n51) & 26.67% (n48) (p <0.001*) respectively. Male were predominantly more prevalent to having CVD, 78.33% (n141), (p <0.001).

Conclusion: Patients having CVD, invariably presented with the complains of heaviness of leg and unexplained leg swelling and Varicose vein were highly prevalent irrespective of sex. Advanced stages are more common in male patients. In every age group were having different stages of CVD. More awareness can help patients to get proper management and relief from chronic venous disease.

Keywords: CVD, leg swelling, varicose veins, oedema, skin discolouration

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Introduction:

Patients with chronic venous disease (CVD) seek treatment for a variety of symptoms and signs that may substantially impact their quality of life (QoL). Symptoms include leg pain, discomfort, and heaviness, whereas

the clinical signs of CVD are varicose veins (VVs), oedema, skin discolouration, lipodermatosclerosis, and, in severe cases, venous ulceration. Based on the presence of specific clinical signs, which may or may

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not be symptomatic but are associated with increasing clinical severity, CVD can be classified from C0 (no signs) to C6 (venous ulceration)¹. This form of venous dysfunction may be the result of recanalisation of thrombosed venous segments, pathological dilation of the vein or due to congenital absence of competent valves². CVD is a very common problem with varicose veins affecting more than 25 million adults in the United States and more than 6 million with more advanced venous disease³. Estimates from the west show that prevalence of varicose veins varies widely from 2–56% in men and from 1–60% in women and venous ulceration affect approximately 0.3% of the adult population⁴. In Bangladesh, there is no published data regarding the prevalence of CVD. However, unpublished data from the National Institute of Cardiovascular Diseases (NICVD) suggest that about 50% of all patients undergoing Duplex study for vascular diseases are venous patients and more than 80% of venous consultations are for C4-C6 disease⁵. Prevalence estimates for varicose veins are higher, <1% to 73% in females and 2% to 56% in males⁶. A lower prevalence has been observed in men but some recent surveys have suggested that the occurrence in men may be comparable to that in women⁷. This study was designed to see prevalence of chronic venous disease in NICVD and also to see the relationship to various symptoms of chronic venous disease with age, sex and body mass index of the patient.

Materials and Methods:

The prospective observational study was carried out in department of vascular surgery of National Institute of Cardiovascular disease. 180 patients were randomly chosen with chronic venous disease (CVD) and evaluate their characteristics and prevalence of several types. Data collection started from May 2021 for next 6 months in patients who was admitted with CVD like symptoms. Who were aged 18 years and above and willing for treatment and given informed written consent were included this study and patients below 18 years of age were excluded in this study. Data were collected with a pre-tested structured questionnaire containing history, clinical, laboratory investigations, pre-operative, post operative complications and post operative follow up findings. Data were collected, compiled and tabulated according to key variables. The analysis of different variables was done according to standard statistical analysis by using SPSS-19.

Results:

The patients of this survey were aged between 24 to 70 years and the Mean±SD age was 43.6±12.2. 78.3% patient were male and male: female ratio was 3.6:1. around 80% patient were employed that includes service (23.3%), business (33.3%), farming(10%) and garments working(13.3%). 66.7% patients were from low socio-economic background [Table I]. All types of CVD patients were seen in our study [Table II], among them C2 varicose vein was more prevalent (35%). Advanced stage C5 healed venous ulcer also seen highly prevalent (21.7%).

Table-I
Demographic characteristics of the study patients (n=180)

| Variables | Number of patients | Percentage (%) |
|-----------------------------|--------------------|----------------|
| Age group (years) | | |
| 20-30 | 27 | 15.0 |
| 31-40 | 51 | 28.3 |
| 41-50 | 42 | 23.3 |
| 51-60 | 48 | 26.7 |
| 61-70 | 12 | 6.7 |
| Mean±SDRange (min-max) | 43.6±12.2 24-70 | |
| Sex | | |
| Male | 141 | 78.3 |
| Female | 39 | 21.7 |
| Male : Female ratio | 3.6:1 | |
| Occupation | | |
| Service | 42 | 23.3 |
| Business | 60 | 33.3 |
| Garments worker | 24 | 13.3 |
| Retired | 12 | 6.7 |
| Farmer | 18 | 10.0 |
| Housewife | 24 | 13.3 |
| Socioeconomic status | | |
| Low | 120 | 66.7 |
| Middle | 48 | 26.7 |
| High | 12 | 6.7 |

Table-II
Distribution of the study patients by clinical classification (n=180)

| Clinical classification | Number of patients | Percentage |
|----------------------------------------------|--------------------|------------|
| C2 varicose veins | 63 | 35.0 |
| C3 edema | 24 | 13.3 |
| C4b lipodermatosclerosis or atrophie blanche | 21 | 11.7 |
| C5 healed venous ulcer | 39 | 21.7 |
| C6 active venous ulcer | 33 | 18.3 |
| Total | 180 | 100.0 |

31-40 years age group were most prevalent having CVD with 51 patients, then 41-50 years age group with 42 patients and 51-60 years age group with 48 patients showing diversified distribution of the disease in the several age groups [Table III]. Male were more prevalent having CVD [Table IV] with 78.3% presence. 27.7% male showed C5 healed venous ulcer (p<0.001*) whereas C2 varicose veins were most prevalent among female (69.2%) (p<0.001*). C5 healed venous ulcer and C6 healed venous ulcer were mostly prevalent among service holder and businessman [Table V]. Association of CVD with socio-economic status results were in Table VI.

Table-III
Association of clinical classification of CVD with age group (n=180)

| Age group (years) | | Clinical classification | | | | | p-value |
|-------------------|-----|-------------------------|-----------|-----------------------------------------------|------------------------|------------------------|---------|
| | | C2 varicose veins | C3 edema | C4b lipodermato sclerosis or atrophie blanche | C5 healed venous ulcer | C6 active venous ulcer | |
| 20-30 | 27 | 24(88.9%) | 3(11.1%) | 0(0.0%) | 0(0.0%) | 0(0.0%) | <0.001* |
| 31-40 | 51 | 21(41.2%) | 0(0.0%) | 6(11.8%) | 9(17.6%) | 15(29.4%) | |
| 41-50 | 42 | 12(28.6%) | 9(21.4%) | 3(7.1%) | 3(7.1%) | 15(35.7%) | |
| 51-60 | 48 | 6(12.5%) | 12(25.0%) | 0(0.0%) | 27(56.3%) | 3(6.3%) | |
| 61-70 | 12 | 0(0.0%) | 0(0.0%) | 12(100.0%) | 0(0.0%) | 0(0.0%) | |
| Total | 180 | 63(35.0%) | 24(13.3%) | 21(11.7%) | 39(21.7%) | 33(18.3%) | |

p-value obtained by Chi-square test, *significant

Table-IV
Association of clinical classification of CVD with sex (n=180)

| Sex | | Clinical classification | | | | | p-value |
|--------|-----|-------------------------|-----------|-----------------------------------------------|------------------------|------------------------|---------|
| | | C2 varicose veins | C3 edema | C4b lipodermato sclerosis or atrophie blanche | C5 healed venous ulcer | C6 active venous ulcer | |
| Male | 141 | 36(25.5%) | 12(8.5%) | 21(14.9%) | 39(27.7%) | 33(23.4%) | 0.001* |
| Female | 39 | 27(69.2%) | 12(30.8%) | 0(0.0%) | 0(0.0%) | 0(0.0%) | |
| Total | 180 | 63(35.0%) | 24(13.3%) | 21(11.7%) | 39(21.7%) | 33(18.3%) | |

p-value obtained by Chi-square test, *significant

Table-V
Association of clinical classification of CVD with occupation (n=180)

| Occupation | Clinical classification | | | | | | p-value |
|-----------------|-------------------------|-----------|-----------------------------------------------------------|------------------------------|------------------------------|---------|---------|
| | C2 varicose veins | C3 edema | C4b lipodermato sclerosis or atrophie blanche | C5 healed venous ulcer | C6 active venous ulcer | | |
| Service | 42 18(42.9%) | 3(7.1%) | 9(21.4%) | 0(0.0%) | 12(28.6%) | <0.001* | |
| Business | 60 18(30.0%) | 9(15.0%) | 0(0.0%) | 12(20.0%) | 21(35.0%) | | |
| Garments worker | 24 12(50.0%) | 3(12.5%) | 0(0.0%) | 9(37.5%) | 0(0.0%) | | |
| Retired | 12 0(0.0%) | 0(0.0%) | 12(100.0%) | 0(0.0%) | 0(0.0%) | | |
| Farmer | 18 0(0.0%) | 0(0.0%) | 0(0.0%) | 18(100.0%) | 0(0.0%) | | |
| Housewife | 24 15(62.5%) | 9(37.5%) | 0(0.0%) | 0(0.0%) | 0(0.0%) | | |
| Total | 180 63(35.0%) | 24(13.3%) | 21(11.7%) | 39(21.7%) | 33(18.3%) | | |

p-value obtained by Chi-square test, *significant

Table-VI
Association of clinical classification of CVD with socioeconomic status (n=180)

| Socioeconomic status | Clinical classification | | | | | | p-value |
|-------------------------|-------------------------|-----------|-----------------------------------------------------------|------------------------------|------------------------------|---------|---------|
| | C2 varicose veins | C3 edema | C4b lipodermato sclerosis or atrophie blanche | C5 healed venous ulcer | C6 active venous ulcer | | |
| Low | 120 45(37.5%) | 15(12.5%) | 9(7.5%) | 27(22.5%) | 24(20.0%) | <0.001* | |
| Middle | 48 18(37.5%) | 9(18.8%) | 0(0.0%) | 12(25.0%) | 9(18.8%) | | |
| High | 12 0(0.0%) | 0(0.0%) | 12(100.0%) | 0(0.0%) | 0(0.0%) | | |
| Total | 180 63(35.0%) | 24(13.3%) | 21(11.7%) | 39(21.7%) | 33(18.3%) | | |

p-value obtained by Chi-square test, *significant

Discussion:

In our body, venous system is an important and one of the largest organs of the body, and venous disease is a burden for the society and a cause of much disability⁸. The prevalence of CVD increases with age and it is more common in women than men⁹. However, estimates of CVD prevalence vary widely from study to study (15–80%) due to differences in study design and target population^{10–15}. A study conducted in 3000 primary care patients in Pakistan, which reported a CVD prevalence of 34.8% [16]. This study also reported a higher prevalence of CVD in men (36.4%) than in women (33.0%) and of C3 (36.7%) than symptomatic C0 (C0S) (14.6%), C1 (13.8%) and C2 (15.8%). Compared with other studies, the sample population of this study was younger (mean age 39 years) and consisted mostly of males (52.6%)¹⁶. Our study showed consistent result with the Pakistani one, showing

high prevalence in male than female. Vein Consult was an international study that recruited 91,545 patients from 20 countries in Europe, Latin America, Middle East and South East Asia, while the study conducted by Vuylsteke and colleagues included 6009 patients from Belgium and Luxembourg¹⁷ had a similar mean age (50.6 and 53.4 years, respectively) with which our result remain consistency with similar age group.

Conclusion:

Chronic venous disease is not uncommon in Bangladesh. Patients often faces heaviness of leg and unexplained leg swelling and engorged vein but rarely seek support from healthcare professionals at the first place. In our study we found there is no distinct age group was there with high prevalence rather CVD can be happened every group. Moreover, male are having more

CVD than female> advance stages comes with increasing age and also without proper follow up by the physicians. A well-designed awareness activity can be implemented nationally in order to increase awareness so that patients get to know the disease characteristics and seek support from health care professional.

Conflict of Interest: There is no conflict of interest in this study.

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