



CORRELATION BETWEEN VCSS AND VSDS IN PATIENTS WITH CHRONIC VENOUS INSUFFICIENCY- A CROSS SECTIONAL STUDY

Dermatology

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ABSTRACT

Background: Chronic venous insufficiency is a common disease entity affecting about 10-20% individuals with a significant impact on quality of life. 1 Stasis dermatitis is a consequence of impaired venous drainage and often accompanied by chronic leg ulcers. 3 The severity of the disease was measured by venous clinical severity score and radiological quantification by doppler was done by Venous Segmental Disease Score.

Aims: The aim of the study was to analyze correlation between VCSS and VSDS in CVI patients.

Materials and Methods: In this institution-based cross-sectional study, clinically and sonographically confirmed cases of CVI were included. Clinical severity of the disease was assessed by using VCSS. Correlation between VCSS and VSDS was analyzed.

Results: Mean VCSS and VSDS in the study population were 11.75 and 2.375 respectively. VCSS and VSDS did not have a correlation.

Conclusion: VCSS is an important tool for measuring severity in CVI. No significant correlation between the two scores could be established.

KEYWORDS

Chronic venous insufficiency, Venous clinical severity score, Venous segmental disease score.

INTRODUCTION:

CVI develops due to inadequate functioning of venous wall or valves of lower limb veins resulting in excessive pooling of blood causing venous hypertension that leads to reflux in superficial venous compartment from deep venous compartment¹. It is clinically characterized by pain, edema around ankle by end of day, dermatitis, purpuric spots (due to hemosiderin deposition), induration, varicosity, leg ulceration, atrophy blanche, and lipodermatosclerosis. To standardize diverse clinical manifestations of CVI, clinical, etiological, anatomical, and pathological (CEAP) classification was developed by American Venous Forum at sixth annual meeting in 1994.² It cannot assess disease severity. An Ad hoc Committee of the American Venous Forum on Venous Outcome Assessment proposed venous clinical severity score (VCSS) and venous disability score (VDS), in March 2000.³ VCSS is a dynamic scoring system, which avoids static elements of CEAP classification, with ability to reflect changes after treatment over a short period (months). This scoring system was reliable with acceptable inter-and intra observer variability.⁴ The concept behind the VSDS was to combine pathophysiologic designation of reflux and obstruction with venous segments of anatomic classification. In addition to an objective score that could complement clinical score, a major motivation for pursuing this approach was the opportunity to gather necessary information for scoring by duplex scanning. Previously many studies were done to assess correlation between clinical severity and quality of life in CVI, however, there is lack of studies analyzing correlation between clinical severity and radiological interpretation of anatomical changes. Hence, the present study aimed to analyze correlation between VCSS and VSDS.

AIM OF STUDY:

To analyze correlation between venous clinical severity score and venous segmental disease score in CVI patients.

MATERIALS AND METHODS:

A hospital-based study was conducted on patients attending dermatology OPD in tertiary care hospital from September 2019-March 2020.

STUDY DESIGN: Cross-sectional observational study.

SAMPLE SIZE: Study comprised of 20 cases evaluated with help of

predesigned proforma including history, and clinical examination done to estimate VCSS and venous doppler to estimate VSDS.

INCLUSION CRITERIA:

Patients >18 years of age irrespective of gender. Patients with following skin changes of lower extremities (CEAP classification- C4 to C6) :-

1. pigmentation or eczema (C4a)
2. lipodermatosclerosis (C4b)
3. atrophie blanche (C4b)
4. healed venous ulcer with eczematous changes of surrounding skin (C5)
5. active venous ulcer (C6)

- Patients confirmed of having primary chronic venous insufficiency by Venous Doppler.

EXCLUSION CRITERIA: Patients with ulcers and dermatitis due to causes other than CVI like diabetes mellitus, hypertension, lymphatic stasis, arteriosclerosis etc.

DATA COLLECTION: After obtaining consent from patients, history was taken as per proforma and clinical examination to estimate VCSS and also subjected to venous doppler to attain VSDS.

RESULTS:

Out of 20 patients enrolled in the study, 15 were males and 5 were females.

Table 1: LIST OF TWO SCORES IN ALL PATIENTS:

SERIAL NUMBER	VCSS	VSDS
1	8	1
2	10	2.5
3	15	3
4	17	2.5
5	10	2
6	9	2
7	17	2.5
8	15	2.5
9	8	2

10	11	2.5
11	7	3
12	16	3
13	17	2.5
14	13	1.5
15	9	1.5
16	9	2.5
17	14	2.5
18	10	3
19	12	2.5
20	8	3

Table 2: DISTRIBUTION OF DIFFERENT ATTRIBUTES OF VCSS (n=20)

PARAMETER	ABSENT=0	MILD=1	MODERATE=2	SEVERE=3
Pain	6(30%)	5(25%)	7(35%)	2(10%)
Varicose veins	0	3(15%)	6(30%)	11(55%)
Edema	1(5%)	1(5%)	17(85%)	1(5%)
Pigmentation	0	3(15%)	15(75%)	2(10%)
Inflammation	10(50%)	6(30%)	4(20%)	0
Induration	1(5%)	2(10%)	17(85%)	0
Ulcer number	13(65%)	6(30%)	0	1(5%)
Ulcer duration	13(65%)	5(25%)	2(10%)	0
Ulcer size	13(65%)	5(25%)	2(10%)	0
Compressive therapy	15(75%)	2(10%)	3(15%)	0

A total of 20 patients were included in the study. Ages of patients ranged from 35-83 years. Majority of the patients (35%) belong to age group 58-67 years. The sample had a higher proportion of males (75%) than females. Almost all patients gave a history of prolonged standing in their workplace. Among the 10 parameters of VCSS, varicosities and pigmentation were present in all of them; edema and induration in almost all of them. 35% had moderate pain, 55% had severe varicose veins, 85% had moderate edema, 75% had moderate pigmentation, 30% had mild inflammation, 85% had moderate induration, 35% showed active ulceration. Compliance with compressive therapy was poor in this study group. VCSS ranged from 7-17 and VSIDS ranged from 1-3.

3 patients with VCSS of 8 showed VSIDS of 1, 2 and 3; 3 patients with VCSS of 9 had VSIDS of 1.5, 2, 2.5; 3 patients with VCSS of 10 had VSIDS of 2, 2.5, 3; 2 cases with VCSS of 15 had VSIDS of 2.5, 3; 3 cases with VCSS of 17 had VSIDS of 2.5 each which reflects that radiological score did not correspond to major differences in clinical score. Though clinical severity varied between a broader range of score, radiological scores did not show corresponding rise even in clinically severe cases and were maintained within a narrow range of anatomical damage.

Figure 1: PIGMENTATION AND ULCERATION OF ANKLE AND LOWER ONE-THIRD OF LEFT LEG:



DISCUSSION:

VCSS was developed to assess objectively an individual patient's response to treatment. This scoring system was quantitative. The study conducted by Perrin *et al.*^[5] found that VCSS was easy to rate, relevant, comprised of instruments whose measurement varies with the severity of the disease, and were intended to evaluate the efficacy of treatment of chronic venous disease. Meissner^[4] and his colleagues attempted to validate the VCSS by assessing its reproducibility with the same and different observers. Three different observers prospectively scored 64 patients of CVI twice (on day 1 and in between 7 and 28 days). They had shown that intra observer variation was very low, with mean score differing only by 0.8, resulting in a reliability coefficient of 0.6. Hence, VCSS was a validated, highly reliable, and reproducible tool in assessing the CVI. Venous edema, pigmentation and skin thickening were the most common presenting symptoms in this study, which was not similar to the previous studies.^{[6],[8]} Varicosity, skin pigmentation, induration, and inflammation were commonly observed in this study which was corroborative of study done by Lullove and Alvarez^[8]. In our study, the presence of active venous ulcer was found in 35% cases; amongst them, ulcers with largest dimension of >6 cm and non healing ulcers persisting for >3 months but <1 year were found in only 10% of patients similar to the study done by Vasquez and colleagues^[9] where active ulcers were seen only in 8% cases, but small ulcers (<2cm) and large ulcers (2 - 6 cm) were equally common, and non healing ulcer for 3-12 months was frequently observed finding. The use of compression therapy was very much low (25%) in our study than Vasquez *et al.*(98.9%).^[9] Overall, mean VCSS in this study was 11.75 which was similar to the score of Meissner *et al.*^[4] but much higher than the VCSS of others.^{[6],[7],[9],[10]} But this study does not confirm a strong positive correlation between VCSS and VSIDS.

CONCLUSION:

This study was conducted to analyse the correlation between clinical severity and radiological quantification of chronic lower limb venous pathology. However, this pilot study does not establish a correlation between the two, further studies on larger population size are required to validate the same.

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