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A study to assess the healing in venous leg ulcer treated

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Abstract

Background: Venous leg ulcers are a common and recurring chronic wound caused by damage to the veins and consequent high venous pressure.

Material and Method: A prospective study was conducted at the Department of General Surgery.

Results and Conclusion

The findings of this study help to understand the healing of venous ulcer in comparison of 4LB and CSSB.

Discussion: Healing is better in 4LB in terms of ulcers size reduction and ankle circumference reduction over time. But pain associated with dressing is more in 4LB when compared to CSSB.

Keywords: Treatment, Trauma, Venous, Neuropathy

Introduction

The surgeon is a man of actions. By temperament and by training he prefers to serve the sick by operating on them, and he inwardly commiserates with a patient so unfortunate as to have a disease not suited to surgical treatment. Young surgeons, busy mastering the technicalities of the art, are particularly alert to seize every legitimate opportunity to practice technical maneuvers, the more complicated the better.

Leg ulcers are defined to be loss of epidermal and dermal tissues of leg or foot.1. Leg ulcers are most commonly caused due to

1. Venous insufficiency.
2. Arterial insufficiency.
3. Neuropathy often due to diabetes.
4. Ulcer from prolonged pressure and ischemia.

Less common causes:

1. Trauma.
2. Inflammation.
3. Malignancy
4. Metabolic conditions
5. Infections

Approximately 1% of the population suffer from a leg ulcer at some stage during their lives.2Varicose veins are tortuous, dilated veins whose valves have failed, allowing increasing amounts of blood to reflux the

wrong way down the limb. Varicosities develop in the superficial veins of the leg and mainly affects the long saphenous vein, although it is not uncommon for the short saphenous vein to be involved and indeed other major tributaries nearby always are involved if these two systems are affected.

Aims and Objectives

Aim of The Study: To evaluate and compare the outcomes of four layered bandage and short stretch bandage in people with venous leg ulceration.

Objectives

Primary objective: To compare post bandage outcome, with respect to relative wound area reduction (RWAR), using planimetric measurement.

Secondary objective: To compare pain in both types of bandaging using visual analogue scale.

Materials and Methods

A prospective study was conducted at the Department of General Surgery.

Inclusion Criteria

1. Patients consenting for the study.
2. Patients having active venous leg ulcers.
3. All the genders.
4. Patients with co-morbidities who are not incapacitated/bed ridden.
5. Wound area measuring more than 8 cm2.

Exclusion criteria:

1) Ulcers with proven malignancies.
2) Patients with Immuno deficiencies.
3) Ulcers with associated osteomyelitis of the limb.
4) Patients with co-existing peripheral vascular diseases.
5) Patients with uncontrolled diabetes mellitus.

Methodology

Patients visiting and admitted in hospital with venous leg ulcers who will meet the inclusion and exclusion criteria shall be included for the study after obtaining informed consent. H/o onset, progression and duration of symptoms will be noted. Past history, personal history will be asked. General, systemic, local and other examinations will be done and documented. Venous Doppler was be done. Laboratory investigations like CBC, RFT, RBS, Urine examination were done to know about patient's condition. Following their selection for bandage, alternate patients will be taken up for 4LB and SSB bandage. Patients were be evaluated and data was collected every week.

Wound area was measured every week.

Patient's pain was assessed with visual analogue scale every week. A significant decrease in VAS scores has been observed throughout the entire analyzed period. All the collected data was analyzed at the end of fourth week.

Patient was followed up till 4 weeks after application of bandaging from the first time, when the healing with bandaging was not satisfactory patients were advised for PRP- Platelet rich plasma dressings or vacuum therapy and they were followed up till the ulcer was healed.

Sample Size Estimation

Sample size: n=45

Formula : $n=\frac{Z_{1-\alpha/2}{}^2 pq}{d^2}$

Z1-α/2: Value of normal deviate at considered level of confidence internal

p: prevalence or proportion of the event in the study

d: absolute allowable error

Z1-α/2 :1.96 at 95% of confidence interval

p=4.39; the proportional difference of SSB&FLB in reduction in volume of leg is 4.3

d=7%, q=100-4.3=95.7

n= (1.96)2(4.3) (95.7) ÷ 62

= 43.91 = 45

Result

Table 1: Comparison of Age Distribution in 4LB AND CSSB

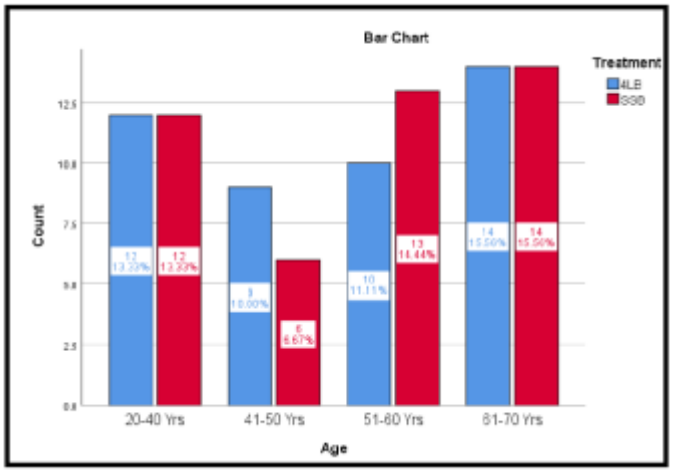
Age * Treatment Crosstabulation				
Count				
		Treatment		
		4LB	SSB	Total
Age	20-40 Yrs	12	12	24
	41-50 Yrs	9	6	15
	51-60 Yrs	10	13	23
	61-70 Yrs	14	14	28
Total		45	45	90

Table 2; Chi Square Test

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.991[a]	3	**.803**
Likelihood Ratio	.996	3	.802
Linear-by-Linear Association	.071	1	.790
N of Valid Cases	90		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.50.

Graph 1: In our study most of the venous leg ulcer was noted in the age group 61-70 years.



Discussion

Venous leg ulcers are a very common and recurrent chronic entity encountered in our clinical and social set up

When we evaluated the venous leg ulcers in our patients with regards to their age and gender and compared the outcome of healing in venous leg ulcer with regards to ulcer size reduction (RWAR), decrease in ankle circumference, pain during management and mobility of the patients, following inferences were noted

Conclusion

Compression provides an effective treatment for the venous leg ulcers. Four-layer bandage has better results in healing of venous leg ulcers as compared to single layer short stretch bandage. Larger ulcers take more time to heal as compare to smaller ulcers. Four-layer bandage is associated with more pain as compared to short stretch bandage and patient has to bear more cost.

- Our study sample size is small inspite that I want to conclude that four-layer bandaging is better for healing than the short stretch bandage.

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