

Study of different site of infection and comorbidities in chronic venous leg ulcers and usage of VAC therapy

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Abstract

Introduction

The term "chronic leg ulcer" (CLU), also known as "chronic lower limb ulcer," refers to a lesion on the leg that has persisted despite adequate care for three months and either has not wholly healed at a certain time.¹ Increase in the elderly population and a rise in risk factors for atherosclerotic occlusion including smoking, obesity, and diabetes, ulceration is becoming more common.² The rising incidence of leg ulcer in many studies has been attributed to an increasing population age.⁶ The aetiology is varied and include chronic venous and arterial insufficiency, trauma (including burns), sickle cell disease and diabetes mellitus.⁷ They present a healthcare burden which is costly, and often associated with poorly coordinated visits to multiple health facilities.⁸

Several studies have shown that, these ulcers often last several years, with a significant negative impact on the quality of life of the patients.^{9, 10, 11} In recent years a number of publications have focused on different strategies to reduce costs and increase health-related quality of life for patients through choice of cost-effective treatment options.^{12, 13 14} The use of negative pressure in management of wounds in this course was first described by Fleischmann et al in 1993.¹⁵ By applying a controlled continuous or intermittent pressure, the Vacuum Assisted Closure (VAC) system has been shown to increase blood flow by up to fourfold the basal level, increase the rate of granulation tissue formation by up to 45 to 105%, reduce local oedema, and significantly lower wound bacterial counts.^{21, 22} In the treatment of persistent wounds that are challenging

to heal, vacuum aided closure therapy has been demonstrated to be an effective adjuvant.²³

This closure therapy cannot be used as a replacement for surgical debridement.²⁴ However, vacuum-assisted closure has a complementary function, and the range of indications for vacuum-assisted closure is constantly expanding. Indications include pressure sores, stasis ulcers, chronic wounds such as diabetic foot ulcers, posttraumatic and postoperative wounds, infected wounds such as necrotizing fasciitis or sternal wounds, soft-tissue injuries, injuries with bone exposure, open abdominal wounds, and for securing a skin graft.^{25, 26}

Aim of the study

- To compare with different site of infection & comorbidities among study group
- Study of various clinical features to rule out accurate diagnosis.
- To use negative pressure wound therapy (NPWT) in patients with chronic venous leg ulceration

Material and method

- The present study was conducted in department of general surgery Rajshree medical research institute, Bareilly
- This is an observation and comparative type of study.

Inclusion criteria

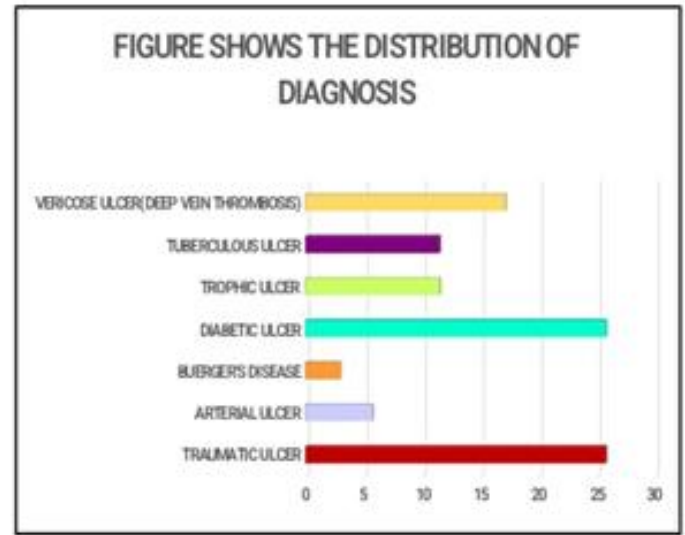
- Clinically diagnosed patients with leg ulcers of all adult >16 years of age.
- Time span of the study was for 18 months
- Sample size included was within the range 30-40.

Exclusion criteria

- Patient who are not willing to part in study.
- Patient who refused to undergone investigation.
- Patients suffering from any psychiatric disease.
- Patient unable to read or write Hindi language.

Statistical analysis & results

Figure 1:

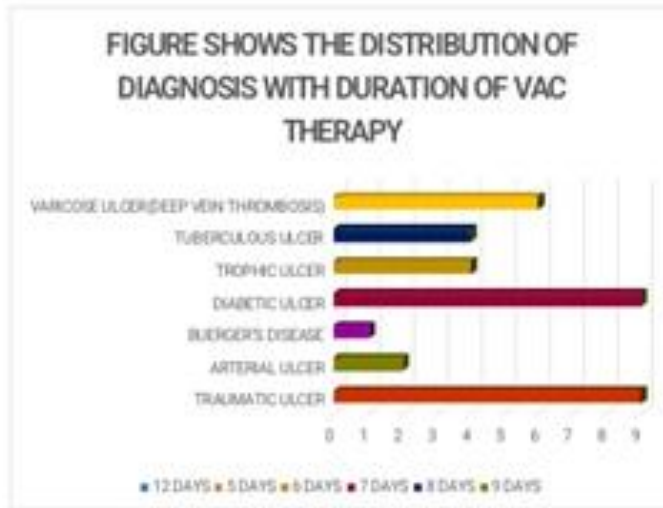


The above table and figure show the distribution of diagnosis where the higher percentage of cases been observed in traumatic ulcer and diabetic ulcer category.

SITE OF WOUND	FREQUENCY	PERCENT
ABOVEMIDDLE MALLEOLUS	5	14.3
BELOW MEDIAL MALLEOLUS	3	8.6
HEELS	2	5.7
LATERAL MALLEOLUS	1	2.9
LEFT FOOT	7	20
LEFT THIGH	3	8.6
RIGHT FOOT	11	31.4
RIGHT THIGH	3	8.6
TOTAL	35	100

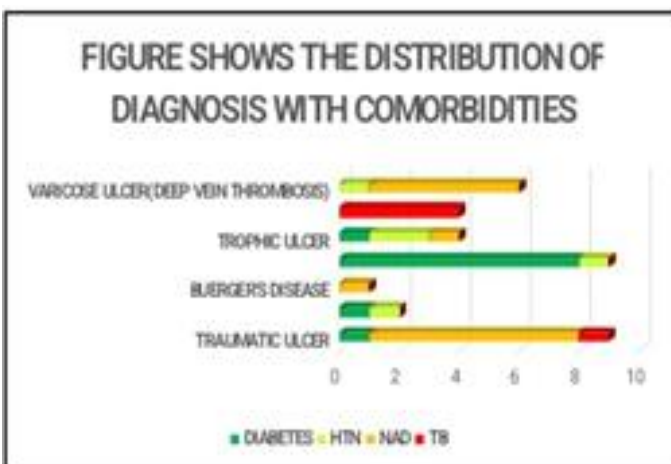
Table 1: shows the distribution of site of wound.

Figure 2:



The above table and figure show the distribution of diagnosis with duration of vac therapy where in traumatic ulcer type proportion of cases been observed to have duration of vac therapy for 12 days whereas for the cases of diabetic ulcer higher proportion of cases been observed to have duration of vac therapy for 7 days. Overall, statistically significant results been found to be present between the groups.

Figure 3:



The above table and figure show the distribution of diagnosis with comorbidities where higher proportion of diabetic ulcer cases had comorbidities of diabetics followed by hypertension where in traumatic ulcer most of the cases been observed to have no abnormally overall

statistically significant results been observed between the groups

Discussions

The present study in terms of the distribution of diagnosis where the higher percentage of cases been observed in traumatic ulcer and diabetic ulcer. Study observed about 70% of the cases of leg ulcers are venous type and others like diabetic, traumatic, malignant, vascular etc constitute remaining 30% of the cases. The present study has observed that the distribution of site of wound where the higher percentage of cases been observed to have wound site at the right foot followed by above middle malleolus category. study in these lines reported V.A.C. therapy leads to a significant improvement in wound management of chronic leg ulcers. The study also documented that V.A.C. therapy should be considered as the treatment of choice for chronic leg ulcer patients.

Conclusion

Healing of chronic leg ulcer is a complex process attributed to several elements. Although various parameters earlier proved to positively affect the healing of ulcers but the present study recommends that V.A.C. therapy should be considered as the treatment of choice for chronic leg ulcers owing to its significant advantages in the time to complete healing compared with conventional wound care. In this present study V.A.C. therapy overall appears to be superior to other wound care techniques.

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