

ROLE OF SUCRALFATE IN WOUND BED PREPARATION**Imran Pathan¹, Ravi Kumar Chittoria², Saurabh Gupta³, Chirra Likhitha Reddy⁴,****Padma Lakshmi Bharathi Mohan⁵, Shijina K⁶, Nishad K⁷, Neljo Thomas⁸, Daisy Loyola⁹****ABSTRACT**

A wound is a common problem following burn, trauma, or infection. There are various methods to limit the infection and to cover the raw area. But there is no well-established method that accelerates the wound healing rate. Sucralfate is used for the management of gastric and duodenal ulcers. Recent studies have shown beneficial effects of sucralfate as a topical drug for the healing of several types of epithelial wounds such as ulcers, inflammatory dermatitis, mucositis and burn wounds. This article highlights the role of sucralfate in wound bed preparation.

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INTRODUCTION

The wound is a common problem encountered by physicians. Many methods are there with varying success¹. Large wounds

often require graft or flap for wound coverage but for this, wound bed should be prepared first. Various modalities exist that helps in enhancing wound bed preparation.

Wounds are managed according to the so-called T.I.M.E. concept, an abbreviation stands for **T**issue management, **I**nfection control, **M**oisture regulation, and wound **E**dge management. It includes- tissue management, infection control, moisture control, and wound edge management. Sucralfate has long been used in gastric and duodenal ulcers. Some studies have shown a beneficial effect on skin lesions. In this article, we share our experience of using sucralfate in a case of venous ulcer of leg.

METHODOLOGY

This is a case report of the use of sucralfate in a non-healing leg ulcer. The Patient was 50 years female who presented with an ulcer on her left leg for five years (Figure-1). The ulcer was 18 x 10 cm, with, the floor was covered with necrotic tissue. There was no history of any co-morbidity. The patient was thoroughly investigated, and it was found that the patient had an incompetent venous perforator in the middle third of the leg. Wound tissue culture was sent and appropriate antibiotic therapy was given. Regular cleaning and dressings were done, but the wound was not showing any good sign of healing. To hasten the wound bed preparation decision was made to give a trial of sucralfate.

After debridement of the wound (figure-2), sucralfate cream was applied uniformly on the wound (Figure-3). Over that non-adherent dressing was placed, and the dressing was done. Every third or fourth day, the dressing was opened and the wound was assessed. Repeat debridement was done if found necessary and sucralfate was applied and the dressing was done. Six such sessions of sucralfate were done over three weeks.



Figure1: Wound at presentation



Figure2: Wound after debridement and two week



Figure 3: Sucralfate cream being applied after debriding the wound

RESULT

After the application of sucralfate, the wound started granulating, the amount of slough and pus discharge also reduced. After six sessions of sucralfate therapy over three weeks period, the wound bed was prepared (Figure-4) and grafting was planned. No adverse local or systemic effect was noted with the use of sucralfate therapy.



Figure 4: Three weeks after sucralfate therapy

DISCUSSION

Wound healing is a complex phenomenon that is divided conventionally into four phases- hemostasis phase, inflammatory phase, proliferative phase, and phase of maturation. These phases overlap each other. Soon after the injury, the hemostasis phase begins leading to the formation of the platelet plug. The platelet and complement system activation causes the release of several growth factors that activate the inflammatory phase. Recruitment of leucocytes, initially neutrophil followed by lymphocytes and macrophages, is the hallmark of this phase. Macrophages release several growth factors like- platelet-derived growth factor (PDGF), transforming growth factor (TGF-beta and TGF-alpha), basic fibroblast growth factor (bFGF), vascular endothelial growth factor (VEGF), etc. These growth factors are responsible for the proliferation, angiogenesis, deposition of collagen, and extracellular matrix (ECM) and the maturation phase. Non-healing wound is caused by an imbalance of growth factors so that these phases do not occur in a timely fashion or their progression is stopped at a different level.¹

Sucralfate role in gastric and duodenal ulcers is well established. It coats the ulcer forms a mucus gel and binds to the bile acids.

Sucralfate role in several other ulcerative lesions has been studied. In some studies it was found that it helps in the healing of chronic venous ulcers.² It has been shown that sucralfate increases the rate of epithelialization and promotes the formation of healthy granulation tissue in second and third-degree burns.³⁻⁵ It also prevents and helps in the healing of radiation-induced ulcers.⁶

The mechanism of action by which sucralfate helps in wound healing is multifaceted. Sucralfate increases growth factors bioavailability and prostaglandins and decreases the production of oxygen free radicals synthesis, thus potentiating angiogenesis, granulation tissue, and re-epithelialization. It increases the bioavailability of growth factors, particularly of FGF. It increases the production of prostaglandins and inhibits oxygen free radicals.²

In our case, we have used sucralfate cream locally in the case of the non-healing leg ulcer. We have observed rapid healing in terms of reduction in necrotic tissue and faster appearance of granulation tissue. The commercially available sucralfate cream also contains xylocaine that helps in pain relief also. No adverse effect was noted with its application.

CONCLUSION

In this study, we found that sucralfate has a role in the healing of the wound and the wound heals at a faster rate. But since it is a single case study, a definite conclusion cannot be made. Large randomized control trials are required to confirm the efficacy of sucralfate in wound healing.

Conflict of Interest Statement-

There is no conflict of interest.

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