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Case Report

***Euphorbia prostrata* extract-based combination therapy in diabetic wound healing: clinical outcomes from a case report**

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ABSTRACT

Chronic wounds in patients with diabetes mellitus remain a major clinical challenge due to impaired microcirculation, persistent inflammation and delayed collagen remodeling, often resulting in prolonged morbidity and consideration of surgical intervention. We report the successful conservative management of a chronic non-healing leg wound in a 55-year-old woman with poorly controlled type 2 diabetes mellitus who presented with a painful wound of more than two months' duration, unresponsive to routine surgical outpatient department (OPD) dressings and initially advised for skin grafting. The patient was treated with a combination of EP extract therapy Sitcom cream dressing twice daily 3 months and Sitcom Forte tablet 1 BD x 1 month and OD x 2 months alongside with antidiabetic medication. Early wound healing and clinical response was noted within 7-10 days, including pain reduction and improved granulation tissue quality. Progressive wound size reduction from peripheral wound towards centre, epithelialization and ultimately complete wound closure with minimal scarring were achieved by end of three months, importantly by sparing wound skin grafting and no local or systemic adverse effects reported. This case suggests that *Euphorbia prostrata*-topical and oral combination was having significant wound healing potential in diabetic patients, possibly related to its anti-inflammatory, antioxidant, venotonic and hemostatic properties. Larger controlled studies are warranted to confirm efficacy and define its role within comprehensive diabetic wound care.

Keywords: Diabetic wound, *Euphorbia prostrata*, Wound healing

INTRODUCTION

Diabetic patients have declined ability to metabolize glucose resulting in hyperglycemic conditions which further complicate the wound healing process. This can result in stalled chronic wounds. The incidence of delayed healing process in diabetic patient is increasing globally due to lack of preventive and control measures.¹ Normal wound healing is a complex process that proceeds through overlapping phases: inflammation, proliferation and remodeling. Each phase is characterized by hemostasis and the infiltration of various immune cells, robust angiogenesis and reepithelization, wound maturation and remodeling respectively. Diabetes disrupts almost all of

these healing processes.² There is significant evidence in the literature that diabetic patients are at a higher risk for increased wound infections, wound dehiscence, and pathological scarring. There are a variety of treatments available for addressing diabetic wounds.² In patients with diabetes, hyperglycemia has been found to be a potential cause of dysfunction of endothelial cells, which are critical for the healing of diabetic foot ulcer via pressure-induced vasodilation, a response that is normally protective for the skin.³ Wound healing is a complex and dynamic process with the wound environment changing with the changing health status of the individual.⁴ E.P. Extract available in various formulation like tab., cream is approved by DCGI in India for the management of hemorrhoids. E.P. Extract

is having profound wound healing action along with anti-inflammatory, anti-oxidant properties. These actions are attributed to the presence of flavonoids and phenolic compounds and tannins. Flavonoids and phenolic compounds have been reported to have anti-inflammatory, anti-oxidant, hemostatic, antithrombotic and Vaso protective actions. Key actions include accelerating wound contraction, promoting angiogenesis and enhancing re-epithelialization. Tannins are known to possess astringent and hemostatic properties. The Tannin component of EP has astringent-like property and ability to precipitate proteins, increased collagen synthesis and improved epithelialization, resulting in faster closure of wounds, used medicinally for wound healing acting as antioxidants and antiseptics.⁵ Thus, the objective of the current case study was to explore the wound healing potential of

Euphorbia prostrata extract tablet and cream in non-healing wounds in uncontrolled diabetes patients.

CASE REPORT

The patient was a 55-year-old female with known history of type 2 DM presented with a painful non-healing wound on the right lower leg. The lesion initially appeared as a boil which was treated with home remedies for over a month which then turned into an open wound associated with pain and difficulty in walking. At the clinic visit, the attending local physician performed a weekly saline dressing of the wound without any specific medication for over a month. Despite this treatment no significant improvement in wound healing or pain reduction was observed.



Figure 1: Serial clinical photographs demonstrating progressive wound healing of the lower limb following treatment with Sitcom Forte tablet and Sitcom cream: (A) initial phase showing a large, well-demarcated superficial/partial-thickness diabetic wound with a bright red granulating base and peripheral epithelial loss, (B) early healing phase with reduction in raw surface area and development of healthy granulation tissue after initiation of *Euphorbia prostrata* (Sitcom) cream applied twice daily in combination with *Euphorbia prostrata* and Calcium Dobesilate (Sitcom Forte) tablets for one month, (C) intermediate phase demonstrating formation of a yellow fibrinous/slough layer over the central defect with advancing marginal epithelialization during the course of therapy, (D) wound closure phase with progressive epithelial bridging and marked reduction in fibrin burden with sustained treatment and (E) late follow-up after three months of maturation phase *Euphorbia prostrata* (Sitcom) cream therapy showing near-complete re-epithelialization with residual post-inflammatory hyperpigmentation and minimal scarring.

Local examination revealed an open wound over right lower leg with healthy but exposed granulation tissue and inflamed margins. The surroundings skin showed mild erythema without purulent discharge and no clinical signs of acute ischemia or systemic infection. Considering the chronicity of the wound and the patient's diabetic status, surgical skin grafting was recommended by a multidisciplinary team comprising an MD (medicine) and an MS (general surgery). However, prior to grafting, and based on the consulting physician's advice, it was decided to first optimize glycemic control and initiate conservative management, wherein the use of *Euphorbia prostrata* (EP) was suggested to promote wound healing before proceeding with surgery. Systemic therapy focused on optimizing glycemic control using antidiabetic agents like metformin 500 mg, sitagliptin 50 mg tablet once before

breakfast and voglibose 0.2 mg tablet once after dinner were started. Monthly lab reports were generated to check glycemic control, which were consistent with poorly controlled DM, a known contributor to delayed wound healing (Table 1). In this case of diabetic wound management, combination therapy comprising *Euphorbia prostrata* (EP) cream (Sitcom® cream) applied twice daily for 3 months, along with EP plus calcium dobesilate tablets (Sitcom Forte®) administered twice daily for the first month followed by once daily for the subsequent two months, resulted in significant improvement in wound healing. Within the first week, there was a notable reduction in pain along with improvement in the quality of granulation tissue (refer Figure 1B). Over the subsequent 8 weeks, progressive wound healing was observed (refer Figure 1D). These findings suggest that the combination therapy oral treatment for 4 weeks followed by continued

topical application for an additional 8 weeks demonstrated sustained efficacy. Complete wound closure with minimal residual scarring was achieved at the end of 12 weeks. Additionally, associated symptoms such as pain and swelling improved to a clinically acceptable extent. The patient regained normal ambulation within 2 weeks.

Table 1: Lab parameters at various months.

Time points	HbA1c	FBS	PPBS
Baseline	9.2%	213	281
1 Month	9.1%	201	209
2 Months	9.5%	261	252

The wound care protocol included initial cleansing using hydrogen peroxide, surgical spirit and povidone-iodine (Betadine) solution, followed by gentle application of Sitcom® cream over the wound surface. The area was then lightly covered with a cotton bandage to protect against dust and external contaminants. Because of the improvement of the wound situation after oral and topical therapy with *Euphorbia Prostrata* (Sitcom), the surgical intervention (skin grafting) was successfully avoided which comes with risks like infection, bleeding, graft failure, scarring and nerve damage, non-healing wound in diabetes. The wound showed good granulation, epithelization and wound contraction following the completion of the Sitcom oral plus topical treatment in an uncontrolled diabetic patient.

DISCUSSION

Wound healing is related to and determined by both pathological process's nature, degree and status of host and environment. Systemic factors such as patient age, the presence of vascular, metabolic and autoimmune diseases, as well as ongoing drug therapy, may affect the wound healing process.⁶ Diabetes delay healing process because it impairs each phase of wound healing, which has a long-term negative effect on quality of life, morbidity and mortality.¹ Tight glycemic regulation is key for optimizing wound healing as uncontrolled hyperglycemia has been shown to impair fibroblast and endothelial cell function in poorly controlled diabetic patients.⁷ Current research has provided scientific evidence for use of *E. prostrata* against diverse pathological conditions with multimodal actions such as anti-inflammatory, analgesic, wound healing, antioxidant, antibacterial activity.⁸

The findings of the present study support and extend the growing body of evidence that *Euphorbia prostrata*-based formulations (Sitcom Forte tablets and sitcom cream) exert meaningful wound-healing effects. In excisional wound model, accelerated wound contraction, earlier epithelialization and improved tissue strength are in line with the original preclinical report by Patil and Limaye, who demonstrated significantly enhanced healing in rats treated with *E. prostrata* extract compared with control.⁹ This convergence of results across excisional wound models suggests that the wound-healing activity is not

model-specific but reflects a true pharmacological property of the EP extract. Clinical studies evaluating Sitcom formulations in hemorrhoidal disease provide additional translational support. Gupta et al reported significant improvement in bleeding, pain, and pruritus in early-grade hemorrhoids treated with oral *E. prostrata* extract, with sustained benefit and good tolerability.¹⁰ Subsequent observational and interventional studies have similarly demonstrated reductions in venous congestion, edema and local inflammation following sitcom therapy, including in peri-operative and pregnancy settings.^{11,12} Although these studies primarily evaluated symptomatic endpoints, the pattern of improvement particularly reduced bleeding, exudation, and mucosal fragility reflects a micro-wound healing response within the anorectal mucosa.

Multiple pharmacological studies provide a mechanistic explanation for these observations. Anti-inflammatory investigations in EP demonstrate inhibition of acute edema and exudation in standard models, attributed largely to its rich content of flavonoids (apigenin, luteolin), phenolic acids (gallic, ellagic acid), and condensed tannins.¹³ These constituents suppress histamine release, down-regulate NF-κB-mediated inflammatory pathways, and attenuate pro-inflammatory cytokines, thereby creating a biochemical milieu favorable for orderly wound repair.

Patent and formulation data further emphasize that *E. prostrata* extract contains flavonoids and phenolic compounds with hemostatic, Vaso protective, antioxidant and wound-healing properties, and that tannins contribute an astringent effect enhancing local hemostasis and tissue contraction.¹⁴ In wound settings, such a profile would be expected to limit early bleeding and oozing, stabilize microvasculature, curtail excessive inflammation, and support collagen cross-linking and re-epithelialization consistent with the enhanced wound contraction and tensile strength reported in the rat excision models.⁹

While the majority of these trials focus on hemorrhoids and varicose veins, the underlying mechanisms improved venous tone, reduced capillary permeability and better microcirculatory flow are directly relevant to wound-bed perfusion and granulation tissue quality.

In patients with diabetes, impaired wound healing is commonly attributed to microvascular dysfunction, persistent low-grade inflammation, oxidative stress, and delayed collagen remodeling. EP properties are particularly meaningful in diabetic tissue, where reduction of edema, capillary leakage and inflammatory exudation may help stabilize the wound micro-environment and support orderly granulation and epithelial repair.

Although dedicated clinical trials in diabetic wounds are lacking, the convergence of these mechanistic and preclinical findings, together with favorable mucosal healing responses reported in anorectal conditions, suggests a plausible supportive role of *Euphorbia prostrata*-based formulations as an adjunct in wound care

for diabetic patients with impaired healing potential. Overall, this case adds to the emerging clinical narrative that *Euphorbia prostrata*-based Sitcom formulations may support local wound stabilization and mucosal recovery.

CONCLUSION

The present case report highlights the potential role of *Euphorbia prostrata* extract-based oral and topical combination therapy in the management of chronic diabetic wounds. In a patient with poorly controlled diabetes and a non-healing lower-limb wound, treatment was associated with pain reduction, progressive granulation, epithelialization, complete wound closure, minimal scarring, and avoidance of skin grafting. Although the clinical outcome was encouraging, larger controlled studies are required to confirm its efficacy, safety, and role in standard diabetic wound care.

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