

## Original Research Article

# EVALUATION OF PHENYTOIN DRESSING OVER CONVENTIONAL DRESSING IN DIABETIC ULCER FOOT HEALING USING PUSH SCORE AT TERTIARY CARE HOSPITAL

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**ABSTRACT**

**Background:** Diabetic ulcers of lower limb are very difficult to treat and they contribute to a great account of morbidity and expenditure of human resources and manpower. Due to poor vascularity and brittle granulation tissue formed during wound healing phase accounts for this. A novel method is needed to overcome these factors and which promotes healing and lessens the hospital stay and morbidity. Dressing the lower limb diabetic ulcers using PHENYTOIN tablets 100mg dissolved in 5ml normal saline[1] solution dripped on the ulcer surfaces is such a search towards our goal.

**Materials and Methods:** Patients admitted from SEPTEMBER-2024 to AUGUST-2025 with diabetic ulcer of lower limb at department of general surgery, Government medical college & ESI hospital, Coimbatore are included in the study. By systemic random sampling those patient will be divided into two groups and data collected.

**Results:** 30 patients were included in phenytoin group and 30 patient in conventional group and collected data were analysed using chi square test.

**Conclusion:** wound healing was better in phenytoin group compared to conventional group in terms of pain, hospital stay. It has statistical significance with significant p value.

**Keywords:** diabetic ulcer, phenytoin, granulation.

**INTRODUCTION**

Diabetic ulcers of lower limb are very difficult to treat and they contribute to a great account of morbidity and expenditure of human resources and manpower. Due to poor vascularity and brittle granulation tissue formed during wound healing phase accounts for this. A novel method is needed to overcome these factors and which promotes healing and lessens the hospital stay and morbidity. Dressing the lower limb diabetic ulcers using PHENYTOIN tablets 100mg dissolved in 5ml normal saline,<sup>[1]</sup> solution dripped on the ulcer surfaces is such a search towards our goal. phenytoin promotes migration of capillary endothelial cell,<sup>[2,3]</sup> and produces angiogenesis,<sup>[4]</sup> and thus formation of healthy granulation tissue. It also reduces bacterial translocation,<sup>[5]</sup> and necessary

for antibiotics minimized. Phenytoin also enhances type 1 collagen synthesis,<sup>[6,7]</sup> and hence the stable granulation tissue causes better healing.

**Objectives of the study**

**Primary:** To prospectively compare the healing of lower limb diabetic ulcers in patients with conventional saline dressing and topical phenytoin saline dressing using PUSH score.

**Secondary:** To analyse and compare the parameters of 1. hospital stay 2. antibiotic requirements based on culture & sensitivity 3. analgesia requirement.

**MATERIALS AND METHODS**

**Study Design:** Prospective cohort study

**Inclusion Criteria**

Patients admitted from SEPTEMBER-2024 to AUGUST-2025 with diabetic ulcer of lower limb at

department of general surgery, Government medical college& ESI hospital, Coimbatore are included in the study. By systemic random sampling those patient were divided into two groups.  
 (p) group- wound dressed with PHENYTOIN tablets 100mg dissolved in 5ml normal saline,<sup>[1]</sup> solution

dripped on the ulcer surfaces. This group contained 30 patients.

(c) group- wound dressed with conventional way of normal saline or metronidazole dressing. This group contained 30 patients

Both group wound healing was compared using PUSH score.

**Table 1**

Length* width (in cm2)	0	1 <0.3	2 0.3-0.6	3 0.7-1.0	4 1.1-2.0	5 2.1-3.0	Sub score
	0	6 3.1-4.0	7 4.1-8.0	8 8.1-12.0	9 12.1-24.0	10 >24.0	
Exudate amount	0 none	1 Light	2 moderate	3 heavy			Sub score
Tissue type	0 closed	1 Epithelial tissue	2 Granulation tissue	3 Slough	4 Necrotic tissue		Sub score
							Total Score

**Exclusion Criteria**

Patients with

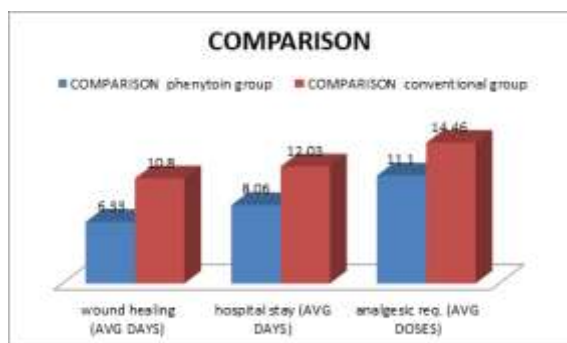
1. Features of sepsis,
2. Peripheral arterial occlusive disorders,

3. Any allergy to phenytoin, were excluded from this study.

**Outcome:** The data obtained were analysed in terms of mean hospital stay, mean analgesic dosage requirement, wound healing using chi square test.

**RESULTS AND DISCUSSION**

COMPARISON	Phenytoin group	Conventional group
wound healing (AVG DAYS)	6.33	10.8
hospital stay (AVG DAYS)	8.06	12.03
analgesic req. (AVG DOSES)	11.1	14.46



Wound healing is better in phenytoin group in terms of Mean hospital stay- reduced to 30% compared to conventional group Mean analgesic dosage requirement- doesn't show any significant difference

Mean wound healing time- significant reduction of about 40% in phenytoin group.

**CONCLUSION**

The best modality among the two groups is phenytoin dressing for better diabetic wound care in future. Further studies in large scale is needed.

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