ORIGINAL ARTICLE

Perioperative Glycemic Control and Wound Healing in Diabetic Foot Surgery

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Abstract

Background: The optimal approach to perioperative glycemic control in diabetic foot surgery remains debated, and evidence from routine clinical practice is limited.
Objective: To compare complete wound healing at 12 weeks between the controlled glucose group and the uncontrolled glucose group.
Methods: This study included 162 patients with diabetes undergoing foot surgery treated at two fictional teaching hospitals. The primary outcome was complete wound healing at 12 weeks. Groups were compared using appropriate parametric and non-parametric tests.
Results: Healed at 12 weeks, n (%) was 61 (69.3) in the controlled glucose group and 35 (47.3) in the uncontrolled glucose group (p = 0.005). Re-amputation, n (%) also differed between groups (7 (8.0) vs. 15 (20.3)).
Conclusion: In this sample, controlled glucose was associated with favourable results. Prospective studies are needed to confirm these findings. *(All data in this article are fictional and for template demonstration only.)*
Keywords: diabetic foot; glycemic control; HbA1c; wound healing

Introduction

Perioperative glycemic control in diabetic foot surgery is a common clinical question in daily practice1,2. Variation between centres is considerable, and published series often include small numbers of patients3.

Previous reports suggest that outcomes may depend on patient selection, perioperative care and follow-up protocols4,5. The aim of this study was to compare complete wound healing at 12 weeks between the controlled glucose group and the uncontrolled glucose group.

Materials and Methods

We reviewed 162 patients with diabetes undergoing foot surgery between January 2022 and December 2024. Patients were divided into two groups: controlled glucose (n = 88) and uncontrolled glucose (n = 74). The study was approved by the institutional review board (fictional approval no. EX-2025-001).

The primary outcome was complete wound healing at 12 weeks. Secondary outcomes are listed in Table 1. Continuous variables are presented as mean ± standard deviation and compared with Student's t-test; categorical variables were compared with the chi-square or Fisher's exact test. A p value below 0.05 was considered significant.

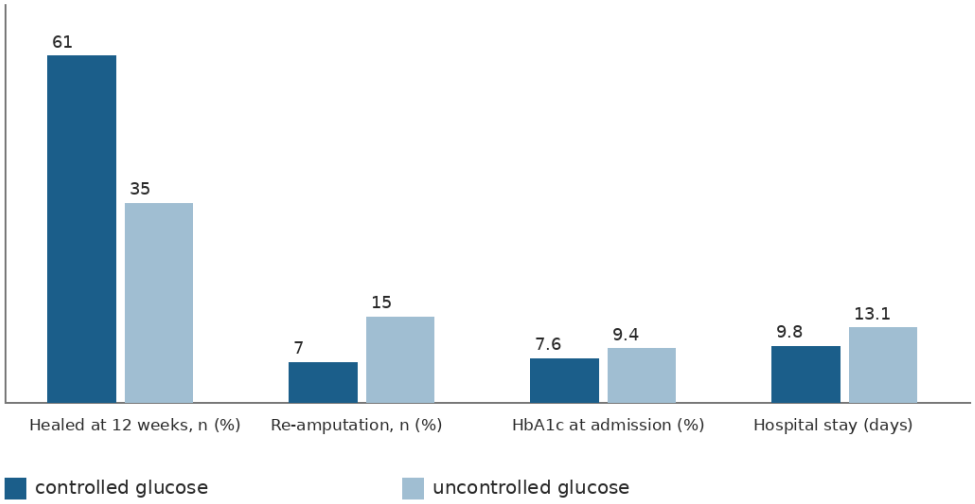
Results

Baseline characteristics were comparable between groups. Healed at 12 weeks, n (%) was 61 (69.3) in the controlled glucose group and 35 (47.3) in the uncontrolled glucose group (p = 0.005; Table 1, Figure 1).

Table 1. Outcomes by group

Figure 1

Fictional data



Discussion

In this cohort, the controlled glucose group showed better results for several outcomes. These findings are in line with earlier reports5,6, although differences in definitions make direct comparison difficult7.

This study has limitations. It was retrospective, performed at two centres, and unmeasured confounders may have influenced the results. Larger prospective studies are warranted.

Conclusion

Controlled glucose was associated with improved complete wound healing at 12 weeks in this fictional sample. The approach appears safe and may be considered in routine practice8.

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