

WOUND HEALING

## EFFICACY AND SAFETY OF CHITOSAN-BASED BIO-COMPATIBLE DRESSING VERSUS NANOSILVER (ACTICOAT) DRESSING IN THE TREATMENT OF RECALCITRANT DIABETIC WOUNDS

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**Introduction:** Chitosan has a biocompatible, biodegradable, and nontoxic nature. The effectiveness of nano-chitosan films in the field of wound healing has been confirmed previously.

**Objective:** To compare the clinical efficacy and safety of two dressings (chitosan and nanosilver dressings) in the treatment of refractory diabetic wounds.

**Materials and Methods:** A total of 25 eligible patients with chronic non-healing diabetic wound were included and randomly assigned to receive chitosan (13 patients) or nanosilver (12 cases) dressing. The dressings were applied on the wounds based on their protocols and patients were visited and examined by an experienced dermatologist every week. The clinical assessments and healing rates were recorded using diabetic foot infection (DFI) Score at the 2nd, 4th, 6th weeks during treatment. The study endpoint (the time needed for complete improvement), safety and tolerability profile were also documented.

**Results:** The patterns of change in total 10-item DFI wound scores didn't differ significantly over time between the two groups. In both groups, the total 10-item DFI wound score reduced continuously through the course of study. The mean percentage reduction of the total 10-item DFI wound score from baseline was 78.1% and 74.1% in the chitosan and nanosilver dressing groups, respectively. Both dressings were well tolerated and there were no product-related adverse events such as allergic reaction or infection.

**Conclusion:** Our findings confirmed that chitosan can be safely and effectively used for the treatment of diabetic wounds just like the nanosilver (acticoat) dressing. Further studies are



recommended to design a randomized clinical trial with more volunteers.

