

# Wounds digest

In this section, we present brief synopses of a range of recently published articles that may be of interest to healthcare professionals working in the wound care setting. The aim of this round-up is to provide an overview, rather than a detailed summary and critique, of the research papers selected. Full references are provided should you wish to look at any of the papers in more detail.

## 1 Effect of honey and povidone-iodine on acute laceration wound healing: a pilot randomised controlled trial study

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓	✓	✓
Novelty factor	✓	✓			

- In Indonesia, acute laceration wounds (ALW) are very common injuries, with povidone-iodine and honey often used dressings for ALW. This study aimed to identify the effectiveness of honey compared to paraffin gauze and povidone-iodine in improving ALW healing time.
- This study was a single-blind, pilot randomised controlled trial with three intervention groups (honey, povidone-iodine and paraffin). The authors enrolled 35 patients, with a mean age of 22.5 years (range: 6-47), and randomised them to the three treatment groups. All patients achieved timely healing, with a mean healing time of 9.45±5.31 days and 11.09±5.14 days for the povidone-iodine and paraffin groups, respectively, and a median healing time of 10 (3-19) days for the honey group ( $p>0.05$ ). More wounds in the honey group achieved healing in under 10 days compared with the other groups. Both povidone-iodine and honey groups had fewer adverse events. Honey had the lowest cost.
- The authors concluded that honey was clinically effective in accelerating healing time with a lower cost compared to paraffin, and was comparable to povidone-iodine. Future RCTs with a larger sample size should be pursued to determine honey's role in ALW treatment.

Suryadinata KL, Basuki A, Song A et al (2024) Effect of honey and povidone-iodine on acute laceration wound healing: a pilot randomised controlled trial study. *J Wound Care* 33(8): 570-6

## 2 Topical pravibismane as adjunctive therapy for moderate or severe diabetic foot infections: A phase 1b randomized, multicenter, double-blind, placebo-controlled trial

Readability	✓	✓	✓		
Relevance to daily practice	✓	✓			
Novelty factor	✓	✓	✓	✓	

- This was a Phase 1b study designed to evaluate the safety and efficacy of pravibismane, a novel broad-spectrum topical anti-infective, in the management of moderate or severe chronic diabetic foot ulcer (DFU) infections.
- This was a randomised, double-blind, placebo-controlled, multicentre study, with 39 individuals in the pravibismane treatment group and 13 in the placebo

group. Safety parameters included clinical observations of tolerability and pharmacokinetics.

- Pravibismane was well-tolerated and exhibited minimal systemic absorption. The subjects treated with pravibismane had approximately a threefold decrease in ulcer size compared to the placebo group (85% versus 30%;  $p=0.27$ ). The incidence of ulcer-related lower limb amputations was approximately sixfold lower (2.6%) in the pooled pravibismane group versus 15.4% in the placebo group.
- These initial findings indicate that topical pravibismane is a safe and potentially effective treatment for infected DFUs.

Lipsky BA, Kim PJ, Murphy B et al (2024) Topical pravibismane as adjunctive therapy for moderate or severe diabetic foot infections: A phase 1b randomized, multicenter, double-blind, placebo-controlled trial. *Int Wound J* 21(4): e14817

## 3 Improving foot self-care in people with diabetes in Ghana: A development and feasibility randomised trial of a context appropriate, family-orientated diabetic footcare intervention

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓		
Novelty factor	✓	✓	✓	✓	✓

- Africa has a diabetic foot ulcer (DFU) prevalence of 7.2%, higher than the global figure of 6.3%. Engaging family members in self-care education has been shown to be effective at preventing DFUs. This study adapted and tested an evidence-based footcare family intervention in Ghana.
- Adults at risk of DFUs and nominated caregivers participated in an individually randomised feasibility trial of the adapted intervention. Patient-reported outcomes were foot care behaviour, foot self-care efficacy, diabetes knowledge and caregiver diabetes distress.
- At 12 weeks post randomisation, the intervention group showed improved footcare behaviour, foot self-care efficacy and diabetes knowledge.
- The authors concluded that, in Ghana, a contextual family-oriented foot self-care education intervention is feasible, acceptable, and may improve knowledge, self-care and diabetes management. Future research will investigate the possibility of remote delivery to better meet patient and staff needs.

Suglo JN, Winkley K, Sturt J (2024) Improving foot self-care in people with diabetes in Ghana: A development and feasibility randomised trial of a context appropriate, family-orientated diabetic footcare intervention. *PLoS One* 19(5): e0302385

## 4 A prospective, open-label, nonrandomized clinical trial using polyvinyl alcohol antibacterial foam for debridement of diabetic foot ulcers

Readability	✓	✓	✓		
Relevance to daily practice	✓	✓	✓		
Novelty factor	✓	✓	✓		

- This study aimed to evaluate the effectiveness of a polyvinyl alcohol (PVA) foam dressing containing gentian violet/methylene blue (GV/MB) in managing chronic diabetic foot ulcers (DFUs).
- A single-centre study was conducted of 20 patients with full-thickness chronic lower extremity wounds (DFUs and venous leg ulcers). The study included 13 men and seven women. Patients received treatment with a PVA foam dressing with GV/MB applied in an outpatient setting over a 4-week period. Wound size, bacterial presence, and healing were assessed using fluorescence imaging and wound measurements.
- After 4 weeks, DFU size decreased by 53%, on average, with four patients achieving complete wound closure. Reduction in ulcer size was strongly correlated with the use of surgical debridement and PVA GV/MB foam. Fluorescence imaging demonstrated a significant reduction in bacterial presence in all patients by the end of the study. Follow-up at 3 and 6 months showed no recurrent ulcerations, indicating the potential for long-term efficacy.
- The author's findings suggest that PVA GV/MB foam dressings, when combined with surgical debridement, are effective in promoting the healing of chronic DFUs. Further research with larger, controlled studies is warranted to confirm these findings and assess cost-effectiveness.

Lullove E (2024) A prospective, open-label, nonrandomized clinical trial using polyvinyl alcohol antibacterial foam for debridement of diabetic foot ulcers. *Wounds* 36(5): 160–5

## 5 A purified reconstituted bilayer matrix shows improved outcomes in treatment of non-healing diabetic foot ulcers

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓		
Novelty factor	✓	✓	✓	✓	

- The authors conducted a randomised controlled trial comparing a novel purified reconstituted bilayer membrane (PRBM) to the standard of care (SOC) in the treatment of non-healing diabetic foot ulcers (DFUs).
- They randomised 105 patients to two treatment groups, PRBM (n=54) and SOC (n=51). The primary endpoint was the percentage of wounds closed after 12 weeks. Secondary outcomes included area reduction, time to healing, quality of life and cost.
- More of the DFUs treated with PRBM healed than those treated with SOC (92% versus 67%, p=0.005). Wounds treated with PRBM healed significantly faster with a mean of 42 versus 62 days for SOC (p=0.00074); additionally they had a mean wound area reduction of 94% in 12

weeks versus 51% for SOC (p=0.0023).

- The authors concluded that the PRBM is an effective option for the treatment of chronic DFUs.

Armstrong DG, Orgill DP, Galiano RD et al (2024) A purified reconstituted bilayer matrix shows improved outcomes in treatment of non-healing diabetic foot ulcers when compared to the standard of care: Final results and analysis of a prospective, randomized, controlled, multi-centre clinical trial. *Int Wound J* 21(4): e14882

## 6 Exploring the effect of wound related pain on psychological stress, inflammatory response, and wound healing

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓	✓	✓
Novelty factor	✓	✓	✓		

- In this study, the authors examined the biopsychosocial model of pain by assessing the relationships between pain, stress, inflammation and healing in people with chronic wounds.
- They conducted a 4-week prospective observational study in 32 patients with chronic wounds in a chronic care hospital in Canada. Pain was measured using the Brief Pain Inventory–Short Form, the McGill Pain Questionnaire–Short Form and the Leeds Assessment of Neuropathic Symptoms and Signs scale. Stress was measured by the Perceived Stress Scale. All wounds were assessed using the Pressure Ulcer Scale for Healing tool. The levels of matrix metalloproteinases in wound fluid were analysed.
- Correlation analysis indicated pain severity was positively and significantly related to pain interference, McGill Pain Questionnaire scores, neuropathic pain and matrix metalloproteinase levels. Logistic regression was used to determine the predictors for high or low perceived stress. The only significant variable that contributed to the stress levels was the Brief Pain Inventory interference score. Results suggested that participants who experienced higher levels of pain interference also had an increased odds to report high level of stress by 1.6 times controlling for all other factor in the model.
- The authors identified a significant relationship between pain, stress and wound healing.

Woo K, González CVS, Amdie FZ, de Gouveia Santos VLC (2024) Exploring the effect of wound related pain on psychological stress, inflammatory response, and wound healing. *Int Wound J* 21(7): e14942