Wound digest

This digest summarises recent key papers published in the areas of pressure ulcers, skin integrity, venous leg ulcers, and diabetic foot ulcers.

SELECTED PAPERS OF INTEREST

1. MRSA infections of the foot: cost savings using linezolid
2. A critical review of modern and emerging absorbent dressings used to treat exuding wounds
3. Observations of periwound skin protection in venous ulcers: a comparison of treatments
4. Efficacy of two compression systems in the management of venous leg ulcers: results of a European randomised control trial

To compile the digest, a MEDLINE search was performed for the three months ending in February 2013 using the search terms "diabetic foot ulcers," "pressure ulcers," "skin integrity," and 'leg ulcers." Papers have been chosen on the basis of their potential interest to practitioners involved in day-to-day wound care. The papers were rated according to readability, applicability to daily practice, and novelty factor.

Diabetic foot ulcers

1 MRSA infections of the foot: cost savings using linezolid

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

- **Management of diabetic foot ulcers can be significantly complicated by infection with methicillin-resistant *Staphylococcus aureus* (MRSA). Linezolid is not a first-line antibiotic treatment for diabetic foot infections, but can be used to minimise inpatient admissions.**
- **The authors audited outpatient linezolid usage in 704 people attending the Diabetes Foot clinic at the Royal Infirmary of Edinburgh, Scotland, from 2005 to 2010. Admissions (defined as a length of inpatient hospital stay), antibiotic usage, and microbiological culture results were recorded.**
- **Clinical effectiveness of linezolid was defined as resolution of MRSA infection (downgrading of ulcer to Infectious Disease Society of America grade 1 or 2 infection) and avoidance of admission for further treatment.**
- **MRSA infection was diagnosed in 17% (*n*=119) of the cohort, of whom 28% (*n*=33) were prescribed linezolid. In 94% of people, linezolid was prescribed for up to a maximum of 14 days. No one took linezolid for more than 28 days.**
- **Admission for further treatment was avoided, or early discharge facilitated, and infection resolved in 91% (*n*=30) of people taking linezolid. The total cost of linezolid was £58 000.**
- **Linezolid treatment of MRSA diabetic foot infections avoided 420 bed-days (at a cost of £500/day), and yielded a total saving of £210 000 on inpatient costs. The authors concluded that linezolid treatment is cost-effective in clinical use for treatment of diabetic foot infections.**

Young MJ, Hodges G, McCardle JE (2012) Cost avoidance using linezolid for methicillin-resistant Staphylococcus aureus infections in a specialist diabetes foot clinic. *J Antimicrob Chemother* 67(12): 2974–5

Pressure ulcers

2 A critical review of modern and emerging absorbent dressings used to treat exuding wounds

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

- **This study was conducted to review randomised controlled trials (RCTs) on absorbent dressings and their ability to manage exudate, while also discussing advances in exudate management dressings.**
- **There is a lack of RCTs comparing modern first-line (primary) dressings, such as alginate, hydrofiber, foam, hydrocolloid, and polysaccharide bead dressings, against each other. Of the trials that have been conducted, methods have been mixed and bias could not be ruled out. None of the dressings trialled proved more effective than the others.**
- **The authors suggest that modern absorbent dressings must interact with the wound by stimulating healing while also absorbing exudate.**
- **Next generation methods of achieving more effective absorbent dressings are being developed. These involve protease inhibitors, growth factors, antimicrobial agents, and sensory smart wound dressings.**
- **Although there is a lack of evidence for the use of modern first-line dressings in ulcers, they still serve a**

purpose, but have limits to their effectiveness. Next generation dressings are still in their infancy, but should provide more effective dressing options in the future.

Sweeney IR, Miraftab M, Collyer G (2012) A critical review of modern and emerging absorbent dressings used to treat exuding wounds. *Int Wound J* 9(6): 601–12

Skin integrity

3 Observations of periwound skin protection in venous ulcers: a comparison of treatments

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

- **Periwound skin is defined as the skin surrounding a wound. It is at high risk of inflammation and maceration, which can lead to infection. Only two previous studies have assessed the impact of periwound skin status on wound healing.**
- **This comparative study was conducted to inspect the effectiveness of two moisture barrier products, Remedy® Nutrashield (Medline Industries) and Cavilon™ Moisturising Lotion (3M) on the periwound skin of venous leg ulcers. The objective was to compare the change in periwound skin and ulcer size depending on the product used.**
- **There were 50 patients included in this study retrospectively who were all treated with Cavilon Moisturising Lotion. The lotion was applied to the periwound skin and lower leg.**
- **Twenty-eight patients were included as a prospective sample. These patients were required to attend the clinic twice during the first week, then weekly or biweekly as advised by their clinician. During these visits, Remedy Nutrashield was applied to the periwound area and lower leg. Results were recorded for 100 days or until the ulcer healed, whichever came first.**
- **Data were collected by questionnaire from patients and clinicians for each clinic visit. The prospective patients were also asked to fill in a survey aimed at measuring their treatment satisfaction; 17 patients completed the survey.**
- **Multilevel change models were used to assess the changes in ulcer and periwound size. These data were analysed using SAS Proc Mixed, version 9.2 (SAS Institute).**
- **The estimated mean rate of change in size over time of the periwound margin was –0.092 cm/day (standard error [SE], 0.021) for prospective patients and –0.026 cm/day (SE, 0.014) for retrospective patients. The decrease in periwound size for the prospective group was larger than for the retrospective group (*P*=0.01).**
- **Results of the patient and clinician surveys showed that both would use Remedy Nutrashield again.**
- **Although both products protected the periwound skin, Remedy Nutrashield reduced the size of the periwound area 3-times faster than Cavilon Moisturising Lotion.**
- **The authors suggested that the integrity of periwound skin may be a determinant of potential treatments, strategies for protecting fragile skin, and reducing ulcer healing time.**

Hunter SM, Langemo D, Thompson P et al (2013) Observations of periwound skin protection in venous ulcers: a comparison of treatments. *Adv Skin Wound Care* 26(2):62–6

Leg ulcers

4 Efficacy of two compression systems in the management of venous leg ulcers (VLUs): results of a European randomised control trial

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

- **The objective of this randomised controlled trial was to access the use of a two-layer bandaging system (K Two®; URGO) against a four-layer bandage system (Profore™; Smith & Nephew) in the management of venous leg ulceration. The study involved 187 patients at 37 investigation centres in France, the UK, and Germany.**
- **Patients with a venous or mixed aetiology leg ulcers, and an ankle brachial pressure index of 0.8–1.3 in both legs, were recruited. Compression bandaging was used for 12 weeks or until the wound was completely healed. Clinicians documented each dressing change and took wound area tracings and digital photographs. Patients were assessed every 2 weeks.**
- **The endpoint was the percentage of ulcers healed at 12 weeks as calculated by the relative wound area reduction (RWAR) (the percentage of wounds with a RWAR >40%, and the absolute wound area reduction [AWAR]).**
- **Results were analysed by an independent company approved by all parties. By trial end, 44% of wounds managed with K Two two-layer bandaging system had healed, and 39% of those using the Profore four-layer bandaging system. The AWAR was 6.6 cm^2 in the K Two group and the RWAR was 47%. The AWAR in the group using Profore was 4.9 cm^2 and the RWAR was 44%.**
- **The authors concluded that the K Two two-layer bandaging system was considered easier to apply, had a good local pain tolerance, and is an acceptable alternative to the Profore four-layer bandaging system.**

Lazareth I, Moffatt C, Dissemond J et al (2012) Efficacy of two compression systems in the management of venous leg ulcers (VLUs): results of a European randomised control trial (RCT). *J Wound Care* 21(11): 553–65