

Lower limb complications

Don't believe the hype



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In a recent editorial (Young, 2010) about new SIGN guidance, I highlighted that there are many areas of diabetic foot care that rely on opinion and consensus in the absence of clinical trials. Two recent reviews, the NICE guidance on managing diabetic peripheral neuropathic pain (DPNP; NICE, 2010; summarised alongside) and a Cochrane review of silver-containing wound care products (Storm-Versloot et al, 2010; summarised below), demonstrate two things. First, that a lack of evidence does not always mean a lack of effect, and second, that evidence does not always mean a thing is true.

Storm-Versloot et al (2010) concluded:

“there is insufficient evidence to establish whether silver-containing dressings or topical agents promote wound healing or prevent wound infection.”

Or, as it was put in the plain-language summary:

“there is not enough evidence to support the use of silver-containing dressings or creams, as generally these treatments did not promote wound healing or prevent wound infections.”

There is a subtle difference here; the lack of evidence appears to have been translated into a lack of effect.

I question whether wound care companies will ever be able to translate laboratory evidence into efficacy in real wounds. Put

simply, the variables in wound healing are significantly greater than the measurable effect of any individual dressing, meaning that to demonstrate efficacy would require trials powered by thousands of participants that perhaps only government, or NHS procurement, departments have the level of funding to make happen. Individual companies are unlikely to invest in such trials that would mean risking millions of pounds on an exercise that might not prove their product beneficial.

On the other hand, the NICE guideline has concluded that a new therapy, duloxetine, is more cost-effective than older and cheaper (per unit cost) treatments, such as amitriptyline, for the management of DPNP. This seemingly surprising conclusion is the result of Markov modelling – indicators were a willingness-to-pay cost of £20 000 per quality-adjusted life-year (QALY) and a 50% reduction in pain.

Newer drugs have better designed trials and – often by recruiting participants with higher baseline visual analogue pain scale (VAPS) scores – show greater reductions in VAPS scores than older drugs with smaller and more poorly designed trials. Interestingly, if the willingness-to-pay figure drops to below £14 000 per QALY, high-dose amitriptyline (75 mg) becomes more cost effective, and the number needed to treat is similar.

So, does the evidence really mean that the conclusion is true?

Young M (2010) (I saw) The SIGN. *Diabetes Digest* 9: 92

NICE

New guidance for managing neuropathic pain

Readability	✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

1 Neuropathic pain develops as the result of neural damage or dysfunction. Symptoms may include altered pain sensation, numbness, burning or spontaneous pain.

2 NICE have produced guidance on the management of neuropathic pain in non-pain specialist settings, which also addresses the management of diabetic peripheral neuropathic pain (DPNP).

3 The first key principle of care is the consideration, at any stage during treatment or at presentation, of referral to a specialist pain service.

4 NICE recommends that the person with painful neuropathy's concerns, treatment expectations, comorbidities and mental health problems be addressed, and be considered in the selection of appropriate drug therapies.

5 While amitriptyline and pregabalin are suggested as first-line treatments for neuropathic pain in people without diabetes, duloxetine is the recommended first-line treatment for people with DPNP.

6 It is recommended that duloxetine be initiated at 60 mg/day – a dose lower than may be appropriate for some people in the management of their DPNP – with upward titration to an effective dose that is not >120 mg/day, or the person's maximum tolerated dose, is reached.

7 Markov models were developed to assess the cost-effectiveness of the pharmacological treatments for neuropathic pain.

NICE (2010) *Neuropathic pain: The Pharmacological Management of Neuropathic Pain in Adults in Non-specialist Settings*. NICE, London. Available at: www.nice.org.uk/guidance/CG96 (accessed 06.07.10)

COCHRANE DATABASE SYSTEMATIC REVIEWS

Evidence on silver therapies insufficient

Readability	✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

1 Silver-containing topical agents and dressings are widely used in wound care for their antimicrobial properties.

2 The authors reviewed randomised controlled trials (RCTs) that

compared silver-containing modalities to either silver- or non-silver containing comparators in uninfected wounds.

3 Twenty-six RCTs, with a total of 2066 participants, met the inclusion criteria and were analysed.

4 The authors concluded that there was insufficient evidence to determine whether silver-containing modalities prevented infection or promoted healing.

Storm-Versloot MN, Vos CG, Ubbink DT, Vermeulen H (2010) Topical silver for preventing wound infection. *Cochrane Database Syst Rev* 3:CD006478

“Following adjustment for a range of independent risk-factors and comorbidities, proximal peripheral arterial disease was significantly associated with poorer prognosis than distal peripheral arterial disease.”

J PLASTIC, RECONSTRUCTIVE & AESTHETIC SURGERY

Elevation of the ulcerated diabetic foot reduces TPO₂

Readability	✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓

1 The authors hypothesised that the traditional indication to elevate an ulcerated diabetic foot – to avoid oedema and its associated complications – may compromise healing in individuals with vascular insufficiency by lowering transcutaneous partial oxygen tension (TPO₂) in the feet.

2 To assess the relationship between foot elevation and tissue oxygenation, the authors measured TPO₂ in ulcerated diabetic feet before and after elevation (achieved with the foot sitting on top of four cushions), and before and after lowering (to approx. 30–35 cm above the ground).

3 People (*n*=122; age range, 40–93 years) with active diabetic foot ulcers were recruited.

4 Elevation of the ulcerated foot was followed by a significant decrease in mean TPO₂, with values dropping from 32.5±22.2 mmHg before elevation to 23.8±23.1 mmHg after (*P*<0.01).

5 Conversely, lowering of the ulcerated foot was followed by a significant increase in the cohort's mean TPO₂, with values rising from 44.6±23.8 mmHg before lowering to 58.0±25.9 mmHg after (*P*<0.01).

6 Furthermore, the authors found that the lower the initial TPO₂, the larger the increase on foot lowering.

7 The authors concluded that lowering, rather than raising, the ulcerated diabetic foot was associated with increased TPO₂ and may stimulate wound healing.

Park DJ, Han SK, Kim WK (2010) Is the foot elevation the optimal position for wound healing of a diabetic foot? *J Plast Reconstr Aesthet Surg* **63**: 561–4

JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY

Poorer overall prognosis for proximal PAD

Readability	✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 The general prognosis of people with peripheral arterial disease (PAD), with respect to disease localisation, was assessed.

2 Hospital data were reviewed by two experienced clinicians for people who underwent their first lower-limb

digital subtraction angiography between January 2000 and December 2005, with follow-up until April 2007.

3 Results from people with PAD (*n*=400; aged 68.3±12.3 years) revealed more distal PAD in those who were older or had diabetes, hypertension or renal failure, while proximal PAD was more frequent among men and smokers.

4 Following adjustment for a range of independent risk-factors and comorbidities, proximal PAD was significantly associated with poorer prognosis (death hazard ratio, 3.18) than distal PAD (*P*<0.002).

Aboyan V, Desormais I, Lacroix P et al (2010) The general prognosis of patients with peripheral arterial disease differs according to the disease localization. *J Am Coll Cardiol* **55**: 898–903

CLINICAL ORTHOPAEDICS AND RELATED RESEARCH

Early reconstruction improves Charcot-foot stability

Readability	✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 The structural deformities that arise from Charcot arthropathy can result in severe instability and plantar ulceration among those with the condition.

2 While non-surgical treatments are the usual management for Charcot feet, the authors reviewed 26 feet in

which surgical reconstruction was the primary treatment.

3 In a mean follow-up period of 2.7 years, all ulcers healed without recurrence. Nine of the 21 participants experienced complications (haematoma, instability) and required further surgery.

4 The authors stressed that there was no control group for comparison in this case series, but the experiences of the majority of participants indicated that early surgical intervention restored foot stability and improved quality of life, with complication levels equal to secondary surgery following failed nonoperative care.

Mittlmeier T, Klaue K, Haar P, Beck M (2010) Should one consider primary surgical reconstruction in charcot arthropathy of the feet? *Clin Orthop Relat Res* **468**: 1002–11

AMERICAN JOURNAL OF PHYSICAL MEDICINE & REHABILITATION

Ankle orthoses provide stiffness, not improved stance or proprioceptivity

Readability	✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 Ankle orthoses providing medial and lateral support were investigated for their ability to improve proprioceptive thresholds and unipedal balance in the older person with peripheral neuropathy.

2 Observations of unipedal stance time, ankle inversion and eversion proprioceptive thresholds were made in 11 people with distal neuropathy with and without ankle orthoses.

3 No change in either measure was observed in the group with or without ankle orthoses.

4 The authors concluded that previously reported improvements in gait in people with neuropathy using ankle orthoses are likely due to increased ankle stiffening rather than improved unipedal stance time or proprioceptive thresholds.

Son J, Ashton-Miller JA, Richardson JK (2010) Do ankle orthoses improve ankle proprioceptive thresholds or unipedal balance in older persons with peripheral neuropathy? *Am J Phys Med Rehabil* **89**: 369–75