Wound Innovations
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Wound innovations: What’s new in 2014?
The following note provides an update on the recent hot topics in the wound healing literature. Dermatology and dermatologists’ role in advancing the science of wound healing and wound care has a long history.

Topical timolol and calcitriol wounds
Timolol is a B2 alpha-receptor antagonist, used in the management of hemangioma, but has been shown to promote wound healing installed chronic diabetic foot and venous leg ulcers.7 Timolol as a topical treatment has been used at the site of chronic wounds with each dressing change.7

Timolol has been shown to promote wound healing through different mechanisms, including keratinocyte migration, promotion of angiogenesis, increased dermal fibroblast migration and epidermal differentiation.7 It improves the ability of keratinocytes to respond to migratory signals such as electrical poles formation and application of electrical fields.1


Atorvastatin and wound healing
Atorvastatin, a lipid-lowering agent, has been shown to accelerate the wound-healing process. It has broad-spectrum pleiotropic effects including anti-inflammatory, antioxidative, immunomodulatory, antibacterial along with improvement of microvascular function and reperfusion.

Simvastatin accelerates tissue repair in animal studies and modulates expression of proteins and cytokines associated with cell-growth pathways.2


Hosivery and venous leg ulcers:
Compression therapy remains the standard first-line management in patients with venous leg ulcers. There is a debate in the literature on the most effective compression method in improving ulcer healing and decreasing recurrence. On the other hand, clinicians have the challenge of patient adherence. Compression bandages are difficult to use, bulky and uncomfortable.

The current systematic review included 36 studies and 2 Cochrane systematic reviews to determine the best compression methods for wound healing in patients with venous ulcer disease. Evidence supports compression over no compression, multicomponent systems over single component, and those with elastic components over those without.2 The current study concluded the superiority of stockings over short stretch bandages for ulcer healing. Stockings had the same healing effect compared to 4-layer systems. The importance of the study is that hosivery should be considered as first line treatment based on patient’s preference.

Mauck KF et al. Comparative systematic review and meta-analysis of compression modalities for the promotion of venous ulcer healing and reducing ulcer recurrence. JVS,2014;60:71S–90S e1–2.

Do biologics prevent wound healing?
Cutaneous wound repair is a complex function of multiple cells that are impacted by TNFα in all phases. Anti TNFαs have been shown to promote wound healing by stimulating inflammation and increasing macrophage-produced growth factors. This role has been studied in refractory ulcers.5

At the same time, the stress of surgery combined with use of immunosuppressive agents have the potential to increase post-surgical complications particularly infection.1 However, in rheumatic patients on biologics, the rate of infection and impaired wound healing have not been increased.5

The British Association of Dermatologists recommends that biological therapies be discontinued at least 4 half-lives prior to major surgery.2 There is no need for change in biologics with the minor surgeries. The half-life of medications affects the recommendations including holding one dose of TNFα blockers and Tocilizumab before surgery, and Rituximab for 3–6 months before surgery.4

There is no evidence to stop biologics in the presence of chronic wounds and the use of biologics during the perioperative period needs further studies.5