

## Guidelines for managing the leg ulcer

Sir,

The article standard guidelines for the management of venous leg ulcer by R Rai<sup>[1]</sup> was lucidly written. The author is to be complimented for a holistic and exhaustive account of the current standard guidelines for managing the leg ulcer. It is an eloquently written synopsis of the whole issue on "leg ulcers."

Etiology, clinical presentation, investigations and management have all been dealt with well in detail. Although most of the stress is on the leg ulcer with venous etiology, ulcers of other etiology too warrant a mention. Majority (>90%) of chronic leg ulcers have a vascular etiology. A detailed history usually provides clues to the etiology of the ulcer and should be confirmed by physical examination and appropriate investigations. Venous ulcers mostly occur above the medial or lateral malleoli. Arterial ulcers often affect the toes, anterior border of the tibia or occur over pressure points. Neuropathic ulcers occur on the sole of the foot or over pressure points.

Ankle brachial pressure index (ABPI) is of tremendous value, as has been aptly brought out by the authors. Color duplex ultrasound scanning has become the gold standard for evaluation of venous obstruction and is also used to assess the location and extent of reflux in venous ulcers.

Compression therapy is the cornerstone in the management of leg ulcer. Based on multicenter, prospective, randomized trials, high-strength compression (>30 mm Hg) and multilayered compression are more effective than lower strength or single layered compression.<sup>[1,2]</sup> If the ABPI is above 0.8, the arterial supply is likely to be adequate for high-strength compression.<sup>[3]</sup> With ABPI between 0.5 and 0.8, no more than light (Class 1) compression is to be used as arterial disease is likely, and compression may further compromise arterial blood supply. For patients with significant arterial insufficiency (ABPI <0.5), compression stockings should not be worn. With an ABPI >1.3, compression should be avoided because high ABPI values may be because of calcified and incompressible arteries. In such patients, a specialist vascular assessment should be sought. Poor adherence to compression therapy is critical in not allowing ulcers to heal or to cause high recurrence. After ulcer healing, compression must be maintained possibly for life to prevent recurrent ulceration. Because the higher the compression pressure applied, the lower is the recurrence rate, the highest pressure tolerated by the patients is recommended.<sup>[4]</sup> Class III pressure garments are less well tolerated, but when tolerated, the recurrence rate is lower than with class II garments. Within

the famous the effect of surgery and compression on healing and recurrence (ESCHAR) trial, recurrence rates for patients treated with compression and venous surgery were 12% at 1 year and 31% at 4 years. These were significantly lower than recurrence rates for patients treated with compression alone (28% at 1 year and 56% at 4 years). In patients with ulceration due to severe arterial compromise, healing rates are unlikely to exceed 50% despite an aggressive policy of revascularization as these patients are often unfit or unsuitable for arterial intervention. In the neuropathic ulcer, especially in the diabetics who have been medically optimized and continue to experience peripheral neuropathy symptoms in the lower extremities, nerve decompression may prevent further nerve fibers deterioration.<sup>[5]</sup> These endeavors may enhance ulcer healing and promote the reduction in ulcer recurrence.

Debridement should be adequate for local control of the ulcer following which dressings should be applied that is simple, non-adherent, cost-effective and acceptable to the patient. For heavily exudative ulcers, foams, alginates, and other highly absorptive primary dressings are selected for temporary coverage along with compression therapy. Which dressing is the best for these ulcers is not known. An extensive review published in the Cochrane database in 2006 concluded that the type of dressing applied to the wound under compression was not found to affect ulcer healing.<sup>[6]</sup>

Antibiotics are to be started only if the patient is febrile and exhibits overt signs of sepsis. A quantitative bacterial culture is more specific and should be performed once wound infection is suspected.<sup>[7]</sup> This is performed by curetting or biopsying the bed of the ulcer. The quantitative biopsy is the current favorite for assessing microbial pathogens within the wound. Quantitative biopsies containing >10<sup>5</sup> organisms/g of tissue are considered significant, and systemic antibiotic therapy should be then considered.

Other adjunctive drugs and measures have again been covered well by the authors in some of the articles and commentaries in the issue. Numerous animal and human studies in human wounds have shown that bone marrow mesenchymal stem cells (MSCs) can augment wound closure. Still, the primary contribution of MSCs to cutaneous regeneration and the long-term systemic effects of MSCs are yet to be established. In addition, we need to determine whether other types of stem/progenitor cells will be more effective. Therefore, more randomized controlled clinical trials need to be undertaken.

Managing the leg ulcer is indeed a daunting challenge that can put to test the skills and guile of the wound-care provider and the patience of the patient. This process needs a dedicated multi-disciplinary team approach for a favorable outcome.

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