

Articles of Interest

Literature Review

Causes, Investigation and Treatment of Leg Ulceration

Authors: Mekkes J, Loots M, Van Der Wal A, Bos J

Publication: *British Journal of Dermatology*. 2003;148:388-401.

Reviewer: Dr. Rob Miller

This is an excellent article that reviews and highlights the common causes of leg ulceration—namely, venous insufficiency, arterial disease and diabetes. It discusses these entities with brief descriptions of their pathogenesis, prevalence, analysis and treatments.

This article also provides an inclusive list of all the causes of leg ulceration, classifying them according to etiology, such as infectious, vasculitis, tumours, metabolic disorders, hematological disorders, physical, etc. It also presents brief summaries of some of the rare forms of leg ulceration related to clotting disorders, leg ulcers secondary to hydroxyurea and some of the uncommon ulcerating skin diseases such as pyoderma gangrenosum. There are several excellent colour photographs of some of these rarer entities, which may help us, as wound-care specialists, in the clinical recognition of some of these uncommon conditions.

The review also presents tables for laboratory screening tests for vasculitis as well as the tests that

should be ordered if one suspects a clotting disorder. As an example, repeated thrombophlebitis or unexplained thrombosis at a young age is an indication for screening for clotting disorders. Recognition of such possibilities should be high on our suspicion list when a patient presents with an ulcer, either in an unusual location, at a young age, or where other causes of leg ulcers such as stasis, diabetes or arterial disease are absent or have been excluded. The article is well researched with 104 references listed for anyone who wants a more detailed study of particular interest.

Nutritional Supplementation for Diabetic Foot Ulcers: The First RCT

Authors: Eneroth M, Larsson J, Oscarsson C, Apelqvist J

Publication: *Journal of Wound Care*. 2004;13(6):230-234.

Reviewers: Kimberly LeBlanc, BScN, RN, ET, MN(c); Dawn Christensen, BScN, RN, ET, MScN

Eneroth et al. conducted a randomized controlled trial exploring the effect of nutritional supplementation on diabetic foot ulcers. Their overall objective was to determine if oral nutritional supplementation improved wound healing in malnourished patients with diabetic foot ulcers when

compared with a placebo. The researchers believed this concept warranted investigation because it is known that malnutrition negatively impacts wound healing in other chronic wounds, whereas the true prevalence of protein-energy malnutrition in patients with diabetic foot ulcers is unknown.

A double-blind, prospective, randomized, controlled trial was conducted. The subjects included patients over the age of 60 who were diagnosed with diabetes mellitus and presenting with foot ulcers classified with Wagner grade I or II of at least four weeks duration. Subjects were required to have agreed to participate in the study, and their distal blood pressure had to have been measured at least once in the previous three months. The patients were given either 400 ml oral nutritional supplements (n=26) or 400 ml placebo (n=27) daily for six months. They were followed monthly for six months and yearly for two years.

A third of the patients were classified as having protein-energy malnutrition at the start of the study with no significant difference between the groups. Critical leg ischemia was more common in the intervention group than the placebo group (p=0.0008). Twenty-four per cent of the patients with protein-energy malnutrition at

inclusion healed at six months compared with 50 per cent of those without it (not significant).

The researchers reported three methodological problems: no generally accepted definition of protein-energy malnutrition exists; a wide range of outcome variables were found; and patients' concordance with supplementation was uncertain.

The study failed to show that oral nutritional supplementation has a significant effect on healing of diabetic foot ulcers. Nutrition is known to affect wound healing; therefore, the researchers concluded that further study is warranted. Future studies must take into account the methodological problems encountered by Eneroth et al. when researching the effects of supplementation on the healing rates of diabetic foot ulcers.

Editor's note: Reviewing an article and deciding it has negative findings is a very important activity from which clinicians can benefit. There is a significant bias that an article that shows no difference is not meaningful. In fact, if the study and subsequent article are well done, the results can be very informative. While the article reviewed in this instance does not have immediate clinical application, it does offer suggestions to other researchers who might plan to do research in this area. ☺