



Your Monthly Update

Dear Colleague

Welcome to the October 2012 newsletter from Pure Bio Ltd.

Did you know:

Black pepper is a powerful fat-fighter due to the active ingredient piperine – giving pepper its pungent taste. Piperine reduces fat levels in the blood and interferes with the activity that helps new fat cells to form (*J Agric Food Chem, 2012; 60: 3853-60*)

Don't forget our website on www.purebio.co.uk. We always welcome feedback and suggestions.

Pressure Ulcers

Protocol Summary

Ranking	Nutritional Supplements	Botanical Medicine
Primary		Manuka honey
Secondary	Diosmin Hesperidin PUFAs Folic Acid Hyaluronic acid Pycnogenol Vitamin C Vitamin E Zinc	Aloe vera – topical
Other	Vitamin E - topical	

Primary – Reliable and relatively consistent scientific data showing a substantial health benefit.

Secondary – Contradictory, insufficient, or preliminary studies suggesting a health benefit or minimal health benefit.

Other – An herb is primarily supported by traditional use, or the herb or supplement has little scientific support and/or minimal health benefit.

Introduction

Pressure ulcers are a breakdown of the tissue under the skin and ultimately the skin itself due to unrelieved pressure. The pressure squeezes the blood vessels and cuts off oxygen and nutrients.

Underlying circulatory problems, such as diabetic complications, are often the cause of lower-extremity pressure ulcers.

Pressure ulcers may take a long time to heal, depending upon a person's age and physical condition. Only 13 percent of pressure ulcers heal within two weeks in an acute hospital environment, and only one-third of the most severe pressure ulcers heal after six months of therapy.

Factors in the development of pressure ulcers include:

- Decrease in body fat causing less padding over the bones
- Slower wound healing
- Decreased blood flow to the tissues
- Diminished sensation and ability to recognize pain
- Bowel and/or urinary incontinence
- Reduced mobility due to osteoarthritis or stroke
- Inability to get out of or move in bed due to illness
- Acute illness, such as pneumonia
- Poor nutrition
- Age (over 70 years)
- Indirect pressure (e.g., friction)
- Decreased mental awareness due to anesthesia or dementia
- Diminished sensation due to diabetes, strokes or other causes
- Recent surgical procedure

Prevention

Some preventative steps include:

- Identifying persons at risk and assessing the skin for early signs of problems
- Regularly changing the person's position
- Attempting to maintain optimum nutrition
- Providing bedding and seating surfaces which support and reduce pressure
- Attempting to keep the skin clean and dry and protected from friction
- Attempting to protect areas at risk by using special garments

Lifestyle Modification

- Walking or any regular exercise will keep the calf muscle pumping blood efficiently.
- Stopping smoking and losing weight will also improve blood circulation.

Integrative Options

Compression bandages, if fitted correctly, are one conventional approach that may help heal leg ulcers.

A double-blind trial found systemic hyperbaric oxygen (HBO) treatments, in which the patient is placed in a chamber with highly concentrated oxygen, five days per week for six weeks significantly improved healing of non-diabetic chronic leg ulcers. This trial confirms the results from several preliminary studies of systemic HBO therapy. While topical application of HBO (the affected body part is encased in a balloon-like chamber and exposed to concentrated oxygen) for skin ulcers has been reported effective in preliminary trials, controlled trials have produced conflicting results. In controlled studies of diabetic patients with skin ulcers or gangrene, systemic HBO has been shown to prevent amputation of affected limbs.

Electrical stimulation applied to the skin is thought to have several biological effects that might accelerate skin ulcer healing. A variety of techniques have been investigated, and controlled or double-blind trials have shown positive results for the use of low-voltage galvanic current, high-voltage pulsed current, transcutaneous electrical nerve stimulation (TENS), and pulsed high-frequency electromagnetic therapy.

Dietary Modification

Protein - Dietary deficiencies may hinder the body's ability to heal pressure ulcers. A controlled study of 28 malnourished nursing home patients with skin ulcers found that ulcer healing was significantly enhanced by a high-protein diet (24% protein) compared with a lower protein (14%) diet. Combined with a higher calorie intake, it may also avoid ulcer recurrence. A controlled study of critically ill older patients found that increasing calorie and protein intake with dietary supplements for 15 days reduced the risk of developing a skin ulcer.

Antioxidants - The skin needs increased supply of antioxidants in order to heal. Taking 3 g/ day of vitamin C can speed up healing of leg ulcers due to thalassaemia (*Br J Dermatol*, 1975; 92: 339-41). Vitamin E applied to the skin will also help ulcers to heal (*Pharmazie*, 1993; 48: 772-5), as will daily use of the antioxidants diosmin (900 mg) and hesperidin (100 mg), or 150 mg/day of zinc (*Int J Microbiol Clin Exp*, 1997; 17: 21-6; *Angiology*, 1997; 48: 77-85).

PUFAs - Evening primrose oil has been shown to improve blood flow to the legs and help heal leg ulcers.

Nutritional Supplement Treatment Options

Diosmin and Hesperidin - *900 mg per day of diosmin and 100 mg per day of hesperidin*. A double-blind trial found that a combination of 900 mg per day of diosmin and 100 mg per day of hesperidin, two members of the flavonoid family, resulted in significantly greater healing of venous leg ulcers after two months. Related flavonoids known as hydroxyethylrutosides have also been investigated for

venous ulcer healing. One controlled study reported significant additional benefit when 2,000 mg per day of hydroxyethylrutosides were added to compression stocking therapy.

Essential Fatty Acids Topical - Pressure ulcers and diabetic ulcers frequently develop in malnourished and/or institutionalized people. A double-blind study of malnourished people compared topical application of 20 ml of a solution containing essential fatty acids (EFAs) and linoleic acid extracted from sunflower oil with a control solution containing topical mineral oil. Each solution was applied to the skin TID. Compared with the control solution, the solution containing EFAs significantly reduced the incidence of pressure ulcers and improved the hydration and elasticity of the skin.

Evening Primrose Oil - *1,500 mg with each meal.* A preliminary report suggested that evening primrose oil improves blood flow to the legs and heals or reduces the size of venous leg ulcers. No controlled research has further investigated this claim.

Folic Acid - *Consult a qualified healthcare practitioner.* An older preliminary report suggested that large amounts of folic acid given both orally and by injection could promote healing of chronic skin ulcers due to poor circulation. No controlled research has further investigated this claim.

Hyaluronic Acid - *Apply a gel containing a partial benzyl ester derivative of hyaluronan under compression bandaging daily.* A controlled trial found that topical application of a hyaluronic acid compound with compression bandaging was significantly better than bandaging alone for healing chronic venous skin ulcers. No research has investigated whether oral hyaluronic acid supplements might be similarly effective.

Pycnogenol - *150 mg per day orally, along with topical application of 100 mg daily.* In a controlled study, diabetic skin ulcers were treated with standard medications plus either 150 mg per day of Pycnogenol orally, 100 mg Pycnogenol topically applied to the ulcers daily, or a combination of oral and topical Pycnogenol treatment. All treatments produced complete healing in more subjects after six weeks compared with a control group receiving no Pycnogenol treatment, but the group receiving oral and topical Pycnogenol had the greatest reductions in ulcer size and in pain and other associated symptoms. In a small controlled study of venous skin ulcers, the same combination of oral and topical Pycnogenol was more effective for healing than oral Pycnogenol treatment alone.

Vitamin C - *1,000 mg daily.* Antioxidants such as vitamin C, vitamin E, and glutathione are depleted in healing skin tissue. Animal research has suggested that vitamin C may help prevent skin ulcers, and in a preliminary study, elderly patients with pressure ulcers had lower blood levels of vitamin C than did ulcer-free patients. Supplementation with vitamin C (3 grams per day) increased the speed of healing of leg ulcers in patients with a blood disorder called thalassemia, according to a double-blind study. And a double-blind trial of surgical patients with pressure ulcers found that supplementation with 500 mg of vitamin C BID accelerated ulcer healing.

Vitamin E Oral - *400 IU daily.* One animal study found that vitamin E (alpha-tocopherol) applied to the skin shortened the healing time of skin ulcers. Another

animal study reported that administration of oral vitamin E before skin lesions were introduced into the skin prevented some of the tissue damage associated with the development of pressure ulcers. A controlled human trial found that 400 IU of vitamin E daily improved the results of skin graft surgery for chronic venous ulcers. No further research has investigated the potential benefit of vitamin E for skin ulcers.

Zinc - Take under medical supervision: 50 mg of zinc (may require 1 to 3 mg of copper daily, to prevent depletion) and apply zinc-containing bandages or tape to the area. Zinc plays an important role in tissue growth processes important for skin ulcer healing. One study reported that patients with pressure ulcers had lower blood levels of zinc and iron than did patients without pressure ulcers, and preliminary reports suggested zinc supplements could help some types of skin ulcer. Supplementation with 150 mg of zinc per day improved healing in a preliminary study of elderly patients suffering from chronic leg ulcers. Double-blind trials using 135 to 150 mg of zinc daily have shown improvement only in patients with low blood zinc levels, and no improvement in leg ulcer healing. A double-blind trial of 150 mg zinc per day in people with skin ulcers due to sickle cell anaemia found that the healing rate was almost three times faster in the zinc group than in the placebo group after six months. Lastly, a preliminary study of patients with skin ulcers due to leprosy found that 50 mg of zinc per day in addition to anti-leprosy medication resulted in complete healing in most patients within 6 to 12 weeks. Long-term zinc supplementation at these levels may need to be accompanied by supplements of copper and perhaps calcium, iron, and magnesium. Large amounts of zinc (over 50 mg per day) should only be taken under the supervision of a qualified practitioner.

Topically applied zinc using zinc-containing bandages has improved healing of leg ulcers in double-blind studies of both zinc-deficient and elderly individuals. Most controlled comparison studies have reported that these bandages are no more effective than other bandages used in the conventional treatment of skin ulcers, but one controlled trial found non-elastic zinc bandages superior to alginate dressings or zinc-containing elastic stockinettes.

Botanical Treatment Options

Manuka Honey - Studies have shown that high activity UMF Manuka Honey provides an optimum germ-free moist wound-healing environment which supports and facilitates the natural healing of varicose and skin ulcers, diabetic ulcers, pressure sores, wounds, burns, boils, cracked skin, cuts and grazes.

Aloe - Apply gel on gauze or dressings daily. *Aloe vera* has been used historically to improve wound healing and contains several constituents that may be important for this effect. A group of three patients who had chronic skin ulcerations for 5, 7, and 15 years, respectively, had a rapid reduction in ulcer size after the application of aloe gel on gauze bandages to the ulcers, according to a preliminary report. A controlled study found most patients with pressure ulcers had complete healing after applying an aloe hydrogel dressing to the ulcers every day for ten weeks. However, this result was not significantly better than that achieved with a moist saline gauze dressing.

Gotu Kola - *Apply an ointment or powder containing 1 to 2% herbal extract daily.*

Gotu kola (*Centella asiatica*) extracts are sometimes used topically to help speed wound healing. Test tube studies have found that extracts of gotu kola high in the active triterpene constituents asiaticosides, madecassoides, asiatic acids, and madecassic acids increase collagen synthesis. An animal study found that topical application of asiaticoside isolated from gotu kola, used in a 0.2% solution, improved healing in non-ulcer skin wounds. An overview of three small human clinical trials suggests that topical use of an ointment or powder containing a gotu kola extract high in the active triterpene compounds may speed wound healing in people with slow-healing skin ulcers. These studies used either a topical ointment with a 1% extract concentration or a powder with a 2% extract concentration. People in these studies were typically treated with IM injections of either isolated asiaticosides or the mixed triterpenes three times per week while using the topical ointment or powder.

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