

Successful Use of a Hydrophilic Polymer Gel for Improving the Quality of Life of Patients with Plaque Psoriasis: Prospective Study

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Understanding Psoriasis:

Psoriasis is a chronic, autoimmune disease that appears on the skin. It occurs when the immune system sends out faulty signals that speed up the growth cycle of skin cells. There are 5 types of psoriasis, with plaque psoriasis being the most common. Plaque psoriasis usually presents as red and white hues of scaly patches on the top layer of the epidermis.

Psoriasis has been shown to affect health related quality of life to an extent similar to the effects of other chronic diseases such as depression, hypertension, congestive heart failure and type 2 diabetes. Depending on the severity and location of outbreaks, individuals may experience significant physical discomfort and some disability.

Treating Psoriasis:

Psoriasis causes itching and pain which can interfere with basic functions such as self-care, walking and sleep. There are numerous topical and systemic treatments available for psoriasis. However, over time psoriasis can become resistant to any one therapy. Furthermore, medical care can be costly and time consuming, while offering little or no improvement in the condition. Now, preliminary evidence suggests that the use of a hydrophilic polymer gel using an oxygen free radical binding technology may be effective in the treatment of plaque psoriasis.

Prospective Study:

Wound-Be-Gone® is a hydrophilic gel that has been clinically proven to accelerate healing, decrease inflammation, reduce pain and reduce scar formation in a variety of skin wounds. The active ingredient in the gel binds and neutralizes oxygen free radicals (reactive oxygen species, ROS); these toxic substances are known to cause inflammation and slow wound healing. This gel also provides a moist healing environment that makes it easier for the skin to repair itself.

This prospective case study will demonstrate the use of the gel in patients with psoriasis and the outcome of the treatments. It is believed that the capacity of Wound-Be-Gone® to provide moist healing, reduce pain and accelerate healing will help patients with psoriasis. We anticipate that the gel will make the patient more comfortable during psoriasis outbreaks, speed the healing of outbreak sites and reduce any scratching, thus reducing infection and scarring.

Discussion:

Psoriasis has been characterized by increased production and release of ROS by leukocytes, keratinocytes and fibroblasts which, in turn, increases lipid peroxidation of the plasma membranes of cutaneous cells. Activation of phospholipase A2, production of arachidonic acid intermediates and inhibition/stimulation of adenylate/guanylate cyclases results in overproduction of cGMP with decreased cAMP/cGMP, a requirement for hyperproliferation of epidermal cells. The active ingredient in Wound-Be-Gone® is tetramethyl piperidine which binds, specifically, to ROS, similar to the antioxidant mechanism of the cellular enzyme superoxide dismutase (SOD). Hence, tetramethyl piperidine is thought to function as an SOD mimetic agent. SOD is known to stimulate dismutation of toxic superoxide anions produced in large amounts during the bursts of oxidative energy metabolism associated with the inflammatory phases of skin diseases and healing. The main result of SOD activity is the production of hydrogen peroxide and molecular oxygen, which are known to be less toxic than superoxide anions. Studies which demonstrate higher plasma concentrations of superoxide anions and SOD indicate that oxidative stress is one of the main pathophysiological features of psoriasis. These findings suggest that the active ingredient in Wound-Be-Gone®, acting as an SOD mimetic, is likely to ameliorate the signs and symptoms of psoriasis.

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