P.O. Box 144345 Austin, TX 78714-4345 ▪ 512.926.4900 ▪ Fax: 512.926.2345 ▪ www.herbalgram.org

HerbClip™

File: ■ Aloe Vera (*Aloe vera*, Xanthorrhoeaceae)
■ Psoriasis
■ Research Quality

HC 041561-519

Date: April 30, 2015

RE: Review Examines Outcomes and Quality of Studies in Clinical Research on Topical Treatment of Psoriasis with Aloe Vera Preparations

Miroddi M, Navarra M, Calapai F, et al. Review of clinical pharmacology of *Aloe vera* L. in the treatment of psoriasis. *Phytother Res*. March 10, 2015; [epub ahead of print]. doi: 10.1002/ptr.5316.

Aloe vera (*Aloe vera*, Xanthorrhoeaceae) is commonly used for skin ailments and as a first aid treatment for minor burns.[1] The gel from leaves has been found to contain a diverse array of bioactive phytochemicals, including anthraquinones and phenolics. Previous work has shown aloe vera to be an immunomodulator and to have anti-microbial, anti-inflammatory, and antioxidant activity. Psoriasis is a chronic skin disease characterized by changes in skin lesions, and current conventional therapies have unreliable efficacy and may cause troublesome adverse effects. Based on its history of use in skin problems, aloe vera may be useful in treating this condition. This review reports on clinical studies of efficacy and safety of aloe vera treatment for psoriasis.

The databases CENTRAL Cochrane Library, Embase, Medline, and Web of Science were searched up to October 2014 for clinical trials. Search terms included "aloe," "*Aloe vera*," "*Aloe barbadensis*," and "aloe gel." These terms were also used in combination with "psoriasis" or "psoriatic plaque." To gauge trial quality, the Jadad scale (a scale ranging from 0 to 5 where the higher number indicates higher trial quality) and the Consolidated Standards of Reporting Trials (CONSORT) Statement in Reporting Clinical Trials of Herbal Medicine Intervention were utilized; the latter consists of a checklist of details of botanical characterization, treatment, and methodology that quality randomized clinical trials should include.

In total, four clinical trials were reviewed, with three trials scoring a 4 (according to the Jadad scale) and one trial scoring a 2. They consisted of an open-label or double-blind design and used either a placebo or active control (specifically, triamcinolone acetonide [TA]). For two trials, patients received both control and aloe vera treatment and used them on one side of the body each for comparison. In the other trials, each patient received placebo, control, or treatment only. In three of the studies, aloe vera preparations alone were used; in the remaining study, a combination treatment including

aloe vera was used. The primary outcomes were changes in symptoms of psoriasis and results of the Psoriasis Area and Severity Index (PASI). This score is from 0, indicating no disease, to 72, indicating most severe disease, and is based on the percentage of body area affected by psoriasis.

One of the double-blind, placebo-controlled, randomized trials reviewed here included 60 patients; equal numbers used either a cream with 0.5% aloe vera extract or placebo cream (both creams with a mineral oil and castor [*Ricinus communis*, Euphorbiaceae] oil mixture) three times daily, five days in a row each week, for four weeks total. In those using the aloe cream, PASI score was lessened from 9.3 to 2.2, and 45% of patients in this group had an improvement of psoriasis. There were no adverse side effects noted. [Note: There is no mention about the significance of these results in comparison to the placebo group.] The second study examined effects of a combination ultraviolet treatment with aloe vera, volcanic earth, and vitamin E on 14 patients that used treatment on one side of the body and placebo on the other, both two times per day for six weeks. Lesion induration, or thickening, was significantly improved at the end of the study in the treatment group with no adverse side effects. No P value was reported.

Another study including 41 patients tested aloe vera and placebo used twice daily for four weeks on different sides of the body on each patient. There was one patient dropout for reasons not specified. At the end of the study, erythema, desquamation (redness and peeling, respectively), and infiltration were lessened in 72.5% of those using aloe vera, but also in 82.5% of those using placebo. In 15 patients, PASI scores improved significantly more on the placebo side of the body. In the last study reviewed, treatment with aloe vera was compared with 0.1% TA in two separate groups of patients for eight weeks. The PASI scores were less in both groups at the end of the study; however, the authors mention that the aloe vera treatment was "slightly" better than TA, based on greater improvements in PASI scores and Dermatology Life Quality Index. It is mentioned that, although considered safe overall, aloe vera has caused adverse side effects such as urticaria, dermatitis, or allergic reaction in published case reports.

The authors conclude that results from the studies reviewed are conflicting. According to the Jadad scores of the included trials, the study using a combination therapy was of lower quality than the others. Pertinent for replicating findings, making meaningful comparisons, or drawing conclusions, preparation details or compound profiles of the aloe vera treatments used were not included. In summary, the studies reviewed here do not indicate that aloe vera in general is an effective treatment for those suffering from psoriasis. Future rigorous clinical trials are necessary.

—Amy C. Keller, PhD

Reference

[1]Lewis WH, Elvin-Lewis MPF. *Medical Botany: Plants Affecting Human Health*. Hoboken, New Jersey: John Wiley & Sons, Inc.; 2003.

The American Botanical Council has chosen not to include the original article.