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HerbClip™

File: ■ Aloe (*Aloe vera* syn. *A. barbadensis*)
■ Human Immunodeficiency Virus (HIV)

HC 101212-465

Date: January 31, 2013

RE: Preliminary Clinical Trial Indicates Aloe May Be Beneficial for Patients with HIV

Olatunya OS, Olatunya AM, Anyabolu HC, Adejuyigbe EA, Oyelami OA. Preliminary trial of aloe vera gruel on HIV Infection. *J Altern Complement Med.* September 2012;18(9):850-853.

Human immunodeficiency virus (HIV) is an RNA retrovirus that belongs to the lentivirus family and is associated with a chronic course of disease. Both HIV types 1 and 2 have been documented as causative agents of acquired immunodeficiency syndrome (AIDS), which is the end stage of the disease state caused by HIV infections. HIV has become a world pandemic, and about 80% of those infected live in sub-Saharan Africa. HIV attacks the lymphocyte sub-group (T helper cells) that express the CD4 surface protein, or in short, CD4 cells. Nigerian guidelines suggest a CD4 count of ≤200 cells/μL as the eligibility criteria for the use of highly active antiretroviral treatment (HAART), but due to poor drug access, only 17% of these eligible participants actually receive HAART.

Aloe (*Aloe vera* syn. *A. barbadensis*) is a succulent indigenous to sub-Saharan Africa that has shown antiviral properties against HIV in vitro. The stiff outer portion of the leaf or rind contains laxative anthraquinones, while the inner pulp or gel is a rich source of polysaccharides, minerals, trace elements, vitamins, and amino acids. Aloe gel has shown glutathione peroxidase and superoxide dismutase activity in vitro, as well as immune modulatory activity. It is generally considered safe for consumption and only minor adverse side effects were reported in a 2004 clinical trial.[1] This 12-month pilot study evaluated changes in weight and CD4 counts in HIV patients consuming aloe compared to age-controlled cases receiving HAART.

A total of 10 HIV-infected mothers between the ages of 25 and 40 years were recruited for the aloe case study from Wesley Guild Hospital Ilesa, a unit of Obafemi Awolowo University Teaching Hospital in Ile Ife, Nigeria. These women did not meet the Nigerian criteria for HAART, with the exception of 1 patient who was initially on HAART but stopped because of unbearable adverse effects.

"They were given 30-40 mL of blended aloe gruel daily." The aloe vera tongues were harvested from a local plantation and the identity of these plants was confirmed at the

Faculty of Pharmacy Herbarium, Obafemi Awolowo University, Ile Ife, Nigeria. Neither the leaf part(s) used, the gruel preparation method, nor the gruel concentration was described.

The CD4 counts, weight, liver function, electrolytes, urea, creatinine, hemogram (full blood count), and the physical wellbeing of all patients were monitored over the course of the study from October 2008 to October 2009. CD4 counts and weight at baseline, 6, and 12 months were compared to 20 age-matched controls (HIV-positive mothers) that were managed with HAART.

The average increase in CD4 count was 154 cells/μL (range: 94-300 cells/μL) in the aloe cases, while the increase in the HAART group was 239 cells/μL (range: 68-642 cells/μL). In the aloe cases, the average weight gain was 4.7 kg (range: 3-7 kg) compared to 4.8 kg (range: 1-7 kg) in the HAART cases. Using the independent samples T-test to analyze the CD4 and weight data, there was no statistically significant difference between the 2 groups (P=0.087 and P=0.916, respectively).

The authors of this preliminary study point out that although case-controlled studies do not provide the highest level of evidence, ethical considerations precluded both the inclusion of a placebo group and denial of treatment to patients eligible for HAART. They also note that the positive HAART case controls used in this study were not ideal because these patients had much lower CD4 counts at baseline and were less physically fit than the aloe cases. Nonetheless, the patients consuming aloe had CD4 count increases and weight gains similar to the HAART group, with fewer adverse effects. Despite the limitations of this study, the authors suggest that aloe may be an inexpensive and readily available treatment alternative for patients not eligible for or not able to access HAART.

—Laura M. Bystrom, PhD

Editorial Comment:
In addition to the ambiguous description of the aloe gruel, the case controls and statistical analyses may also be questioned. Case-controlled studies are typically 1:1 comparisons of active cases to matched cases; the 1:2 comparison of aloe to HAART cases in this study may have skewed the data. The cases were only matched for age, a variable which may have less significance than the weight endpoint. A 1:1 comparison of weight-matched cases may have provided a more rigorous assessment of the 2 therapies.

Reference

[1]Oliff HS. Clinical trial on aloe gel for the treatment of acute ulcerative colitis. *HerbClip*. July 15, 2005 (No. 020451-284). Austin, TX: American Botanical Council. Review of Randomized, double-blind, placebo-controlled trial of oral aloe vera gel for active ulcerative colitis by Langmead L, Feakins RM, Goldthorpe S, et al. *Aliment Pharmacol Ther*. April 1, 2004;19(7):739-747.

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