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# HerbClip™



**File: ■ Aloe (*Aloe vera*)**
**■ Safety**
**■ Electrocardiographic Variables**
**■ Blood Pressure**

**HC 031135-427**

**Date: June 30, 2011**

**RE: Aloe Vera Exhibits No Electrocardiographic or Hemodynamic Effects in Study**

Shah SA, DiTullio P, Azadi M, Shapiro RJ, Eid TJ, Snyder JA. Effects of oral *Aloe vera* on electrocardiographic and blood pressure measurements. *Am J Health Syst Pharm*. 2010;67(22):1942-1946.

*Aloe vera* syn. *A. barbadensis*, the most commonly used species of aloe, has been used topically and orally to treat several skin conditions, constipation, diabetes, dyslipidemia, hypertension, and to prevent cancer. In an evaluation of complementary and alternative medicine (CAM) use in El Paso, Texas in 2000, 77% of residents reported using CAM, with aloe being the second most popular herb used for medicinal properties.[1] Despite widespread use of oral aloe, its safety profile remains unknown, say the authors. The objective of this double-blind, placebo-controlled, crossover study conducted at David Grant USAF Medical Center at Travis Air Force Base, California was to evaluate the electrocardiographic and hemodynamic effects of oral aloe in healthy subjects.

For the study, 16 young, healthy subjects (6 women and 10 men) were enrolled. None had comorbid conditions or were taking any prescription, nonprescription, or nutraceutical products. Their mean age was 25 ± 5 years.

On day 1 of the study, the subjects were assigned randomly to receive either the oral aloe solution (1200 mg ACTIValoe powder [Aloecorp; Lacey, Washington] in 120 mL of deionized water) or a placebo (citric acid in 120 mL of deionized water). Eight subjects were in each group. On day 8, after a 7-day washout period, the subjects received the treatment they did not receive on day 1.

The subjects were instructed not to consume caffeinated products the evening before and on each study day. Measurements were taken at the same time each day after 10-minute rest periods.

On each study day, electrocardiographic variables and systolic and diastolic blood pressures were evaluated at baseline and at 1, 3, 5, and 8 hours after treatment.

For both groups, the primary endpoint for electrocardiographic measurements was the maximum post-treatment Q-Tc interval over 8 hours. For blood pressure measurements, the primary endpoints were the maximum systolic and diastolic blood pressures.

Adverse events were evaluated at all post-treatment time points. One participant reported an upset stomach 12 hours after placebo consumption; this was resolved after an additional 12 hours. No other significant adverse effects were reported.

The authors report that no significant differences in electrocardiographic or blood pressure measurements were seen. The maximum Q-Tc interval was 419 ± 17 milliseconds in the placebo group and 422 ± 17 milliseconds in the aloe group (P=0.686). The maximum P-R interval was 166 ± 22 milliseconds in the placebo group and 169 ± 25 milliseconds in the aloe group (P=0.538). The maximum QRS complex duration did not differ significantly between the groups.

The maximum systolic blood pressure measurements in the placebo and aloe groups were 120 ± 16 mm Hg and 120 ± 14 mm Hg, respectively (P=0.950). The maximum diastolic blood pressure measurements in the placebo and aloe groups were 74 ± 10 mm Hg and 75 ± 9 mm Hg, respectively (P=0.478).

Among the limitations of this study were the use of a single dose of aloe, the unknown effect of consuming dosages >1200 mg per day, the absence of an independent quality assessment of the product used, and the possibility that some of the cardioactive constituents of aloe may not be absorbed after a one-time dose, showing a lack of effect in this study.

The authors explain that aloe consists of saccharides, vitamins, essential and nonessential amino acids, inorganic compounds, enzymes, and other miscellaneous agents, including low levels of anthraquinones. Anthraquinones are believed to be responsible for aloe's laxative effects. "Arrhythmia induction, as a result of laxative-driven electrolyte imbalance, cannot be ruled out as an effect of oral aloe vera," say the authors. The manufacturer's evaluation of this purified inner leaf product indicated that it contained ≤0.1 ppm anthraquinones.

The authors cite animal studies suggesting that aloe may induce cardiostimulant hemodynamic values and exhibit hypotensive effects. This preliminary human study failed to verify these effects after a single dose of twice the recommended daily dose.

The authors conclude that, "A single dose of oral aloe vera had no effect on electrocardiographic or blood pressure measurements in young healthy volunteers."

*—Shari Henson*

**Reference**

[1]Rivera JO, Ortiz M, Lawson ME, Verma KM. Evaluation of the use of complementary and alternative medicine in the largest United States-Mexico border city. *Pharmacotherapy*. 2002;22(2):256-264.

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