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**FILE: ■Gotu Kola (*Centella asiatica*)
■Cognition and Mood
■Elderly**

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RE: Pilot Study Examines Effects of Gotu Kola on Cognition and Mood in Older Subjects – Results Promising

Wattanathorn J, Mator L, Muchimapura S, et al. Positive modulation of cognition and mood in the healthy elderly volunteer following the administration of *Centella asiatica*. *J Ethnopharmacol*. 2008;116(2):325-332.

The age-related decline in cognitive ability has been characterized as a decrease in attention, memory, and psychomotor speed. Studies have suggested that this mental decline can be prevented.

Gotu kola (*Centella asiatica* [CA]), is found almost all over the world including in China, India, Sri Lanka, and Thailand. This plant has a reputation for restoring declining mental function. It is also touted as having memory-enhancing effects. The objective of this double-blind, placebo-controlled, randomized, pilot study was to determine the effect of a CA extract on cognitive function and mood in older Thai subjects.

The CA used in this study was obtained from Tambon Sila, Khon Kaen Province, Thailand. The plant was authenticated, a standardized extract was prepared, and capsules were assembled with 250, 500, or 750 mg of the CA extract. Each subject received one capsule of placebo or CA extract daily for 8 weeks.

At baseline, subjects were assessed for cognitive performance, mood, and quality of life. After a single administration and at 1 and 2 months after treatment, they were assessed for cognitive performance and mood. Quality of life was assessed after 2 months of treatment.

Cognitive performance was assessed with a test measuring 9 parameters. In addition, the event-related potentials (N100 and P300 amplitude and latencies) of all subjects were measured. These tests required subjects to listen for and to count random audible tones.

Mood was measured via components of the Bond–Lader visual analog scale combined to form three mood factors: namely, alertness, calmness, and contentment.

Four male and 24 female healthy subjects (mean age 65 ± 3.6 years) from the Khon Kaen, Thailand area were divided into 4 groups: placebo, CA 250 mg, CA 500 mg, or CA 750 mg. At baseline, there were no significant differences in any measures. No subjects discontinued the study; no other safety-related results were reported.

In terms of cognitive ability, subjects receiving CA demonstrated a significant decrease in reaction time with an increase in the percent accuracy of working memory. The authors suggest that these findings indicate the CA extract exerted its influence on both speed and quality of working memory.

CA also improved mood. Subjects treated with 750 mg/day CA showed a significant increase in alertness as compared with those treated with placebo after 1 and 2 months of treatment ($P=0.0016$ and $P=0.0229$, respectively). Similarly, CA-treated subjects (at all dose levels) demonstrated a significant increase in calmness after 1 and 2 months of treatment ($P=0.0316$ and $P=0.0141$, respectively). No significant difference for contentment between CA- and placebo-treated subjects was found.

After 2 months of treatment with 750 mg/day CA, N100 amplitude significantly increased ($P=0.0087$). Previous studies have demonstrated that the N100 component is interpreted as a sensory gain effect and is related to attention. The authors suggest that the effect of CA in improving working memory might be associated with improvement in attention manifested as increased N100 amplitude.

The authors of this study conclude that CA extract might improve alertness and calmness, which in turn improves attention and ultimately improves working memory.

It is reasonable to suggest that the relationship between the CA treatment and cognitive improvements is not a simple relationship. Although this study is the first study to demonstrate (with several valid biological markers) the positive modulation effect of CA on cognitive function and mood in older subjects, the precise mechanism underlying these effects requires further investigation.

—*Jennifer Minigh, PhD*

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