Date: December 31, 2008

RE: Positive Association between Elevating Blood Pressure and Improved Cognitive Function after Supplementation with Hawthorn Berry Extract and Camphor


Chronically low blood pressure is associated with symptoms such as fatigue, depression, dizziness, headache, and palpitations and with significant morbidity and mortality. The World Health Organization defines hypotension as a systolic blood pressure <110 mm Hg in males and <100 mm Hg in females, regardless of diastolic blood pressure. Furthermore, several studies have shown an association between chronic hypotension and reduced cognitive function, particularly deficits in attention. The physiological mechanism responsible for this effect is thought to be a decrease in cerebral blood flow to the brain. Preliminary studies showed that administration of the potent sympathomimetics midodrine and etilefrine increased attentional performance in hypotensive subjects. The objective of the present study was to evaluate the effects of the combination of an antihypotensive agent prepared from hawthorn (Crataegus spp.) berry extract and camphor on attentional functioning and blood pressure in hypotensive women.

Two double-blind, randomized, placebo-controlled studies were conducted at the Biological Psychology Unit of the University of Munich: one conducted in 2006 (Study I; n = 40) and one conducted in 2007 (Study II; n = 48). In both studies, hypotensive (systolic blood pressure <100 mm Hg) women aged 18-40 years with no serious physical disease or psychiatric disorders were recruited, and the physiological measures (systolic and diastolic blood pressure before and 3 minutes after treatment) and psychological tests were conducted before and after administration of placebo or the test substance (verum). Each participant received a single 25-drop dose of placebo or Korodin® (Robugen GmbH, Esslingen, Germany) in the morning. One drop of Korodin® (drug-extract ratio 1:1.3-1.5 in 60%
ethanol) provided 1 mg D-camphor and 38.62 mg hawthorn berry extract containing at least 0.3% procyanidins, as well as 0.2% menthol. For Study I, the Attentional Performance Test (Test d2), the Alertness Test, and the Connect-the-numbers Test were administered. In Study II, the Connect-the-numbers Test and the Digit Symbol Test were administered.

Study I
Both systolic (P < 0.001) and diastolic (P < 0.029) blood pressure increased significantly more in the verum group than in the placebo group when measured 3 minutes after treatment. No significant differences in the results of Test d2 or Alertness Test were observed between groups. However, the verum group performed significantly better than did the placebo group on the Connect-the-numbers Test (P < 0.038).

Study II
Systolic blood pressure increased significantly more in the verum group than in the placebo group after treatment (P < 0.001); no significant differences in the change in diastolic blood pressure were observed between groups. The verum group performed significantly better than did the placebo group on the Connect-the-numbers Test (P < 0.034) and on the Digit Symbol Test (P < 0.005). Systolic blood pressure was significantly correlated with the Connect-the-numbers Test result (r = –0.29, P < 0.05) and with the Digit Symbol Test result (r = 0.39, P < 0.01).

The authors of this study concluded that Korodin administration "elevates blood pressure almost immediately after application and that it has beneficial effects on mental functioning." The results support the findings of a previous study\(^1\) that showed that Korodin stabilized arterial blood pressure in patients with orthostatic hypotension. Systolic blood pressure increased by 5–8 mm Hg and diastolic blood pressure increased by 2–5 mm Hg after a single dose of the test substance in the hypotensive women in the present study. The observed positive correlation between the increase in systolic blood pressure and improvement in cognitive performance "suggests that blood pressure plays a causal role in the cognitive deficits in hypotension." Thus, antihypotensive treatment improves cognitive performance. Since the potent sympathomimetic drugs that have shown similar beneficial outcomes are associated with considerable side effects, they may be less appropriate for long-term use.

—Brenda Milot, ELS

References

Enclosure: Referenced article reprinted with permission from Elsevier GmbH.