Cognitive enhancer effect of citicoline alone or in combination with Panax Ginseng: A prospective human psychometric study

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Abstract

A prospective study was conducted to address the combined effect of Panax Ginseng and citicoline on human psychomotor performance and visual working memory in normal healthy volunteers. Eighty healthy volunteers were randomly assigned to four groups: Group A (Control group, n=20) was placebo, Group B (Ginseng group, n=20) received Panax Ginseng, Group C (Citicoline group, n=20) received citicoline, and Group D (Combined group, n=20) received Panax Ginseng plus citicoline. Psychomotor performance, vigilance and visual working memory of normal healthy volunteers were assessed before and after 1-month therapy. Panax ginseng led to an improvement in most components of the psychomotor performance measures, arousal function and visual working memory accuracy ($p<0.05$), but did not significantly affected recognition reaction time (RRT) and 1-back working memory accuracy ($p>0.05$). Regarding citicoline treatment, it led to an improvement in psychomotor performance measures and visual working memory accuracy ($p<0.05$), but did not markedly changed arousal and vigilance ($p>0.05$). When citicoline and Panax ginseng were used in combination, a marked improvement in both psychomotor performances and visual working memory accuracy on healthy volunteers were stated ($p<0.01$). Panax ginseng and citicoline act synergistically on human psychomotor performance and visual working memory in normal healthy volunteers.

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