Vinpocetine

Role of vinpocetine in cerebrovascular diseases.
Review article
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Abstract
A cerebrovascular accident, or stroke, is defined as the abrupt onset of a neurological
deficit, which can be due to ischemia. Cerebral ischemia is caused by a reduction in
blood flow that thereby decreases cerebral metabolism. Chronic cerebral hypoperfusion
leads to irreversible brain damage and plays an important role in the development of
certain types of dementia. Vinpocetine, chemically known as ethyl apovincaminate, is a
vinca alkaloid that exhibits cerebral blood-flow enhancing and neuroprotective effects.
Non-clinical and clinical studies have suggested multiple mechanisms responsible for
the beneficial neuroprotective effects of vinpocetine. As no significant side effects
related to vinpocetine treatment have been reported, it is considered to be safe for long-
term use. This vasoactive alkaloid is widely marketed as a supplement for vasodilation
and as a nootropic for the improvement of memory. The present review focuses on
studies investigating the role of vinpocetine in cerebrovascular diseases.

Study of the effects of vinpocetine on cognitive functions].
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Abstract
INTRODUCTION: Chronic cerebral hypoperfusion is a risk factor for the development of
certain types of dementia. Mild cognitive impairment is a stage of predementia
condition, because the symptoms are similar but not as severe as the symptoms in
patients with dementia. Vinpocetine, due to its complex mechanism of action, has an
important role in the improvement of chronic cerebral hypoperfusion.
OBJECTIVES: The aim of our study was to determine the severity of the cognitive decline and to investigate the efficacy and safety of per os 18 months vinpocetine treatment in patients with mild cognitive impairment.

METHODS: We used psychometrical tests (MMSE, ADAS-Cog) to assess the cognitive functions. CGIC-PGIC was used to evaluate the overall change in the disease status. ADL was used to assess the patient's daily activity and the Hamilton Depression Scale to evaluate the patient's mood. The assessments were performed at six visits during the 18 months treatment period.

RESULTS: At the beginning of the treatment, the stage of our patients' mild cognitive impairment was moderately severe. Significant improvement was detected in the psychometrical tests after the 18 months treatment period. The overall status of the disease improved significantly according both to the patient and the investigator. Also significant improvement was detected in daily activity. The complex improvement of the clinical symptoms affected the patients' mood positively. Moreover, vinpocetine was safe and had a good tolerability during the whole study period.

CONCLUSIONS: Vinpocetine, due its complex mechanism of action, improved significantly the cognitive functions, overall disease status and quality of life in patients with chronic cerebral hypoperfusion. As a result, vinpocetine treatment can be recommended for patients with mild cognitive impairment.

Vinpocetine in neurological diseases].
Review article
Show full citation

Abstract
INTRODUCTION: Stroke is the third leading cause of death worldwide (following cardiovascular and cancer mortality) and associated with serious disability for the vast majority of patients. There is no salvage therapy for irreversibly damaged brain areas, improving the circulation of the surrounding hypoperfused areas may be associated with beneficial clinical effects. Cerebral hypoperfusion may play a role in the pathogenesis of
other kind of neurological diseases, improvement of global circulation may have a preventive effect on these conditions.

AIMS: The aim of our study was to review the experimental and clinical articles focusing on the role of vinpocetine in different neurological conditions.

RESULTS: Vinpocetine appears to have several different mechanisms of action that allow for its antiinflammatory, antioxidant, vasodilating, antiepileptic and neuroprotective activities in experimental conditions. On the other hand, several meta-analysis of the existing studies in acute stroke examining short and long term fatality rates with vinpocetin was unable to assess efficacy. In chronic cerebrovascular patients, vinpocetin improves impaired hemorrhagic variables, has significant vasodilating properties, improves endothelial dysfunction, neuroimaging studies showed selective increase in cerebral blood flow and cerebral metabolic rate, all of which are potentially beneficial in cerebrovascular disease and may improve cognitive functions.

SUMMARY: Based on the above mentioned results, vinpocetine plays an important role both in basic research and in clinical management of different neurological diseases.

Effect of vinpocetine (cognitol™) on cognitive performances of a nigerian population.

Abstract
BACKGROUND: Chronic medical disorders are often complicated by cognitive impairments, making medical intervention that can alleviate cognitive disturbances desirable. Vinpocetine enhances cerebral utilization of oxygen and glucose and consequently improves cerebral functions including memory.

AIM: This study assessed the efficacy of vinpocetine (Cognitol™) in improving memory and concentration in cognitively impaired patients.

SUBJECTS AND METHODS: A prospective analytical study of 56 cognitively impaired patients compared with age, sex and level of education matched 56 controls. Cognitive performance was assessed with the Short Blessed Test, which was pilot-tested. Baseline cognitive performances of the patients and controls were obtained and thereafter cognitive performances of the patients were assessed at 6 and 12 weeks
after administration of vinpocetine at a dose of 5 mg twice-a-day. Comparative analysis of their performances at baseline was done using the Student t-test, while the improvement in patients' performances and effect of disease variables on cognitive performances were analyzed with one-way analysis of variance and likelihood ratio analysis respectively.

RESULTS: The mean (standard deviation) [SD] ages of the cognitively impaired patients (56/112) and controls (56/112) were 49.5 (18.9) and 53.8 (15.8) years respectively (P = 0.19; 95% confidence interval [CI]: 2.2-10.8). The pilot study yielded an optimal cut-off error score of 6 with a sensitivity of 71.4%, specificity of 96.4% and accuracy of 83.9%. Patients performed significantly worse than the controls (P < 0.001; 95% CI 6.7-11.4). There were significant improvements in memory and concentration with vinpocetine therapy (P < 0.05). The clinical variables of the patients had no effect on the trend of cognitive performances.

CONCLUSIONS: Vinpocetine was effective in improving memory and concentration of patients with epilepsy and dementia although the efficacy was minimal in demented patients.

Anti-inflammatory effects of vinpocetine in atherosclerosis and ischemic stroke: a review of the literature.

Abstract
Immune responses play an important role in the pathophysiology of atherosclerosis and ischemic stroke. Atherosclerosis is a common condition that increases the risk of stroke. Hyperlipidemia damages endothelial cells, thus initiating chemokine pathways and the release of inflammatory cytokines-this represents the first step in the inflammatory response to atherosclerosis. Blocking blood flow in the brain leads to ischemic stroke, and deprives neurons of oxygen and energy. Damaged neurons release danger-associated molecular patterns, which promote the activation of innate immune cells and the release of inflammatory cytokines. The nuclear factor κ-light-chain-enhancer of activated B cells κB (NF-κB) pathway plays a key role in the pathogenesis of atherosclerosis and ischemic stroke. Vinpocetine is believed to be a potent anti-
inflammatory agent and has been used to treat cerebrovascular disorders. Vinpocetine improves neuronal plasticity and reduces the release of inflammatory cytokines and chemokines from endothelial cells, vascular smooth muscle cells, macrophages, and microglia, by inhibiting the inhibitor of the NF-κB pathway. This review clarifies the anti-inflammatory role of vinpocetine in atherosclerosis and ischemic stroke.