

Global Congress on Neurology & Neuroscience

July 17-18, 2019 | Kuala Lumpur, Malaysia

The effects of the computer-assisted cognitive rehabilitation on visuospatial perception, cognition, and activities of daily living in patients with unilateral spatial neglect from brain injury: A randomized controlled trial

Kyu-Hoo Lee and Yeon-Gyu Jeong

University of Hanyang, Republic of Korea

We compared the effect of computerized-assisted cognitive rehabilitation (CACR) and conventional rehabilitation (CR) on visuospatial perception, visual field and attention, and visual memory in patients with unilateral spatial neglect.

Twenty patients with unilateral spatial neglect from brain injury were randomized into the experimental group ($n = 10$) or the control group ($n = 10$). The experimental group received CACR intervention from RehabCom software, including saccadic eye movement, visual field, and visual-motor coordination training, whereas the control group received CR with 30 minutes for each intervention, five times a week for 4 weeks. Outcome measures were Motor-Free Visual Perception Test (MVPT) and Line Bisection Test (LBT) for visuospatial perception, Visual Span Test (VST) for visual field and attention, Visual Recognition Test (VRT) for visual memory, evaluated before and after each of intervention. A statistically significant difference was found in MVPT ($p < 0.01$), VST ($p < 0.01$), VRT ($p < 0.01$) between the groups after adjusting for baseline values but not in the LBT. Furthermore, the effect sizes showed a large effect on the MVPT and VRT and a moderate effect on the VST in favor of the CACR (Cohen's $d = 1.06, 1.12, 0.67, \text{ and } 0.58$, respectively). Both groups demonstrated statistically significant improvement in all variables ($p < 0.01$).

The CACR was found to be more beneficial than CR at improving visuospatial perception, visual field and attention, and visual memory, implying that the CACR may be an effective intervention to treat the unilateral spatial neglect caused by brain damage.

Biography

Kyu-Hoon Lee is a Director at Department of Physical Medicine and Rehabilitation, Hanyang University. He has published more than 100 research article, book chapter, and edited three books in neurology rehabilitation and robotic walking rehabilitation field. He has published more than 10 paper in reputed journals and has been serving as an editorial board member of Korea rehabilitation medicine.

Yeon-Gyu, Jeong is a research professor at Hanyang University. He has published more than 30 research article in effects of rehabilitation interventions for neurologic system field. He has been serving as a reviewer of disability and rehabilitation & physiotherapy theory and practice.

assa-yk@hanmail.net

Global Congress on Neurology & Neuroscience

July 17-18, 2019 | Kuala Lumpur, Malaysia

Prevalence of abnormal findings in a cohort of patients referred for cervical spine MRI examination by doctors of chiropractic and potential neurological consequences associated with vertebral subluxation

Christopher Kent

Sherman College of Chiropractic, USA

Three hundred and twenty-five cervical spine MR reports were reviewed for spinal abnormalities. Two hundred ninety-seven of 325 reports (91%) presented spinal abnormalities (spinal morpho-structural alterations), while 28 of 325 had no abnormalities noted. One hundred seventy-five reports indicated alterations of spinal curvatures. One hundred ten (30%) of 325 had disc degeneration with 54 of the 110 (17%) exhibiting osteophytosis, 21 (6%) posterior ridging, and 2 (1%) arthrosis of Joints of Lushcka. Degenerative findings in the cervical reports is detailed in Table 3. Degenerative disc disease was indicated at spinal segments from C2 through C7 with the highest prevalence at C4/C5 (69), C5/C6 (87), and C6/C7 (65). Two hundred twenty-eight disc lesions were present with many reports indicating multiple lesions at different segments. One hundred one of 325 reports (31%) indicated disc bulges, 15 of 325 (5%) were specifically central disc bulges. Sixty-four (20%) indicated central herniations, 44 (14%) paracentral herniations, and 4 (1%) disc herniations were found without directionality indicated.

Vertebral subluxations are changes in the position or motion of a vertebra, which result in interference with nerve function. Such changes may result in altered somatic and autonomic nervous system activity. Mechanical and degenerative changes associated with vertebral subluxation may result in a variety of neurological consequences. This presentation discusses causes and staging of spinal degenerative disease, and a review of putative neurological consequences.

Biography

Christopher Kent is a chiropractor and an attorney. He is a Professor and Director of Evidence-Informed Curriculum and Practice at Sherman College of Chiropractic. He is President of the Foundation for Vertebral Subluxation. His research interests include advanced spinal imaging and objective neurological assessments associated with vertebral subluxation. He has 55 publications including 35 peer-reviewed journal papers, 6 book chapters, and 14 peer-reviewed conference abstracts.

ckent@sherman.edu

Global Congress on Neurology & Neuroscience

July 17-18, 2019 | Kuala Lumpur, Malaysia

Nose-to-brain nerve growth factor delivery to protect the human brain in frontotemporal dementia associated with corticobasal syndrome: A pilot study

Alberto de bellis

Maria Rosaria Maglione Foundation o.n.l.u.s, *Italy*

Nerve growth factor (NGF) is the Founding Member of the neurotrophins family of proteins, known for playing a critical protective role in the development and survival of sympathetic, sensory and basal forebrain cholinergic neurons in mammals, including humans. NGF has a neuroprotective action in Alzheimer's and Parkinson's disease, as showed by several studies in animal models and humans. NGF can be delivered to the CNS via nasal route and has a neuroprotective action in case of neurodegenerative diseases and brain injury. Furthermore, recent studies have shown an active link between the nasal pathway and the spinal cord in the delivery of NGF to the CNS, thus demonstrating the neuroprotective ability of NGF to support injured neurons in a mouse model of spinal cord injury. Intranasal delivery of NGF has so far been sufficiently investigated in animal models and only recently in humans, as demonstrated in a recent study on long-term intranasal administration of NGF in two patients affected by Frontotemporal Dementia associated with corticobasal syndrome (FTD/CBS) and in another study on intranasal administration of NGF in a Brain Injury. These studies demonstrated the neuroprotective role of NGF administered nasally. Intranasal administration is the most effective and non-invasive way to deliver NGF to the CNS. These neuroprotective properties of NGF make it a strong candidate for the future treatment of neurodegenerative diseases and other pathologies of CNS (brain injury, spinal cord injury, ischemic damage) when administered via nasal route. NGF would not be able to cure the FTD/CBS but these observations support the hypothesis that NGF slows down the usual decline of the disease. However, these studies reinforce the concept that neurotrophins are able to reach and protect the CNS via nasal route and open the way for new lines of research. Hence, these findings suggest the ability of NGF to protect CNS neurons when administered via nasal spray.

Biography:

Alberto de Bellis, Neurosurgeon, is the Founder and Chairman of Maria Rosaria Maglione Foundation onlus, non-profit organization for Neuroscience based in Naples-Italy. The MRM Foundation runs in honor of the founder's mother, Maria Rosaria Maglione, who suffers from Frontotemporal Dementia. The activity of the MRM foundation is mainly aimed at research and health care for neurodegenerative diseases, brain tumors and spinal cord injury and in support of partner foundations operating in Kenya-Africa, such as the Gallmann Memorial Foundation and the African Neurological Diseases Research Foundation. The main research activities of the MRM foundation are focused on the study of the Nerve Growth Factor and its possible neurotherapeutic applications.

albertodebellis@hotmail.com

Global Congress on Neurology & Neuroscience

July 17-18, 2019 | Kuala Lumpur, Malaysia

N-decyltropine (iem-1556) - perspective anti-parkinsonian and antiepileptic drug

Valery Gmiro and S.E. Serdyuk

Institute for Experimental Medicine, Russia

Rotenone-induced parkinsonism in rats is a common animal model of parkinsonism. N-decyltropine (IEM-1556) when administered orally in a dose of 10 mg/kg significantly exceeds the anti-parkinsonian activity of levodopa in a dose of 20 mg/kg, since 3 times more than levodopa reduces the number of rats with severe oligokinesia, and in contrast to levodopa completely eliminate severe catalepsy in rats with rotenone-induced parkinsonism. IEM-1556 can be proposed as a potential alternate for levodopa in Parkinsonism patients' resistant to levodopa.

The corazal kindling is a generally accepted chronic preclinical model of temporal epilepsy in rats. The standard antiepileptic sodium valproate in a dose of 200 mg/kg after oral chronic administration suppresses development of generalized clonic-tonic pentylenetetrazol kindling seizures in 100% of rats, but prevents local clonic kindling seizures only in 57% of rats. In the specified dose sodium valproate by 1.7 times in comparison with control reduces the average severity of pentylenetetrazol kindling seizures. IEM-1556 in a dose of 10 mg/kg has in 1.6 times higher than that of sodium valproate, anticonvulsant activity, as it reduces the average severity of pentylenetetrazol kindling seizures in 2.6 times compared with the control and prevents local clonic kindling seizures in 86% of rats.

IEM-1556 is adenosine liberator and combines central (nicotinic-blocking) and peripheral (vagus-stimulating) components. The principal difference of IEM-1556 from the known CNS agents (morphine, benzodiazepines, etc.) that stimulate vagal afferents is that vagal stimulation caused by morphine causes side effects associated with activation of efferent vagus (bradycardia, bronchospasm). IEM-1556 is a selective blocker of the parasympathetic ganglia, and therefore turns off the pathological morphine-like efferent vagal impulsion, and the afferent branch of the vagus, on the contrary, stimulates. IEM-1556 is the first selective stimulator of vagal afferents, which, in principle, is not capable of causing peripheral efferent vagal complications.

References: [1] Gmiro V.E. et al., Russian Journal of Physiology. V. 103. N 10. P. 1106-1113. 2017 (in Russian). [2] Patent of the Russian Federation No. 2597616.

Biography

Valery Gmiro is the leading researcher of Institute Experimental Medicine (Russia). He has published more than 150 papers in reputed journals. He is the USSR State Prize Winner for the investigations in the field of physiology of synaptic transmission. He was the first to discover selective inhibitors of subtype of AMPA receptors such as IEM-1460, combined antagonists of NMDA- and AMPA glutamate receptors, synthesized and published the results of successful preclinical studies of drugs for the treatment of epilepsy (IEM-2062, IEM-1913), parkinsonism (IEM-2151, IEM-1913), pain (IEM-1556), multiple sclerosis (IEM-1556), and potentiation of the effects of CNS drugs while eliminating their side effects.

gmiro2119@gmail.com

Global Congress on Neurology & Neuroscience

July 17-18, 2019 | Kuala Lumpur, Malaysia

Tuberous sclerosis complex

Hastuti Sri and Nurul Fajri

FK Unsyiah / RSUD Dr. Zainoel Abidin Banda Aceh, Indonesia

Background & Aim: Tuberous sclerosis or tuberous sclerosis complex (TSC) is a genetic disorder, caused by mutations on either of two genes TSC1 on chromosome 9q34 (hamartin) and TSC2 on chromosome 16p13 (tuberin). First described by Desiree Magloire Bourneville in 1880. The prevalence of one in 9000 live birth, affecting both sexes and all ethnic groups. Patients develop hamartomas of the brain, kidneys, heart, lungs, skin and eyes. The important oral manifestations include oral mucosal angiofibromas and dental enamel pits. It is a multisystem disorder which becomes perceptible only in late childhood, limiting the expediency for early diagnosis in infancy. 60-90 % presents with seizures, usual onset 1 year. The management of these patients is often multidisciplinary involving specialists from various fields. Aim is to identify clinical features of signs, symptoms and characteristic of tuberous sclerosis complex.

Method: Observational descriptive study of patient's medical records. Case report is of 11-year-old boy child presented to the Emergency Department of Zainoel Abidin Hospital with history of repeated episodes of generalized tonic-clonic seizure associated with loss of consciousness. In past, he had multiple hospital admissions for the same reason and was on antiepileptic drug since the age of 3 months with poor control. Antenatal, natal history was normal. Cerebral palsy history since 3 months old. There was no history of seizure in family members

Findings: He had multiple adenoma sebaceum at regio facialis, and fasial angiofibroma. Dental enamel pits. Detailed CNS examination revealed increase deep tendon of both upper and lower limbs reflexes and bilateral positive Babinski's sign. Other systemic examination and fundus examination revealed no abnormality. Investigations showed sub ependymal nodules and Cortical glioneuronal tubers in computed tomography (CT) scan of head and show other test like haemoglobin, complete blood count, renal and liver function tests were normal. During the hospital stay the dose of sodium valproate was increased after which the seizure frequency decreased though he had short seizures in-between.

Conclusion: The prognosis of TSC depends on the severity or multiplicity of organ involvement. About a quarter of severely affected infants are thought to die before the age of 10% and 75% before 25 years. However, in the case of individuals diagnosed late in life with few cutaneous signs, prognosis depends on the associated internal tumors and cerebral calcifications.

Biography

Hastuti Sri is a Lecturer and Neurologist in Aceh Province, Indonesia. She worked as Faculty of Medicine at Syiah Kuala Universit. She completed her Specialist Education at the University of Indonesia. She worked as a Neuropediatric Fellow at University Malaya Medical Center, Kuala Lumpur. She is a Staff of Neurology Department, Zainoel Abidin Hospital, Banda Aceh, Indonesia, Staff of Neuropediatric Division in Neurology Department, Zainoel Abidin Hospital, Banda Aceh Indonesia and Lecturer of Medical Faculty, Syiah Kuala University, Banda Aceh, Indonesia.

wiwid.srihastuti@gmail.com