12th World Congress on

Advances and Innovations in Dementia

September 17-18, 2018   Singapore

Posters

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ADVANCES AND INNOVATIONS IN DEMENTIA

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Missed the proper diagnosis timing: Dementia diagnosis process of the elderly with dementia from the perspective of middle-aged adult children in Korea

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Statement of the Problem: Dementia has a profound effect on society as a whole, including individuals with dementia and their families. Early detection and prevention of dementia, which is an irreversible geriatric medical problem, is the first priority at the present time before entering a super-aged society in Korea. Therefore, exploring the diagnosis process of dementia experienced by middle-aged adult children, the immediate family members of demented elderly who are more likely to develop dementia than anyone else, will identify the relevant factors for early detection of dementia and provide basic data to explore an active intervention strategy for prevention of dementia. The purpose of this study is to explore dementia diagnosis process of the elderly with dementia from the perspective of middle-aged adult children in Korea.

Methodology & Theoretical Orientation: Grounded theory methodology was utilized. Data were collected from 17 middle-aged adult children, the immediate family members of demented elderly during individual in-depth interviews. Theoretical sampling was used until the data reached saturation. Data were analyzed using the constant comparative analysis method.

Findings: The core category emerged as "missed the proper diagnosis timing" explaining the diagnosis process of dementia. It was found that middle-aged children of the demented elderly experienced 8 stages of the process from the time when they recognized the initial symptom of dementia to the diagnosis of dementia according to the time: Overlooking, hesitating, avoiding, being silent, keep passing the buck, coordinating, persuading and getting the diagnosis.

Conclusion & Significance: The results suggested the strategy for early diagnosis of dementia and the basis of nursing intervention to eliminate obstacles through the process of diagnosis of dementia experienced by middle aged children of demented elderly. Furthermore, it is valuable as a basic data of dementia prevention policy for dementia families.

Biography

Jeong Sun Kim is a Professor of Gerontological Nursing in College of Nursing and is Head Professor of the course of Advanced Gerontological Nursing Practitioner (AGNP) in the Graduate School at Chonnam National University of Korea. She is the Vice-President of Korea Gerontological Nurses Association in Korean Nurse Association and is Vice-President of the Council for the curriculum of AGNP. She is an Editorial Member and Board Member of the Korean Gerontological Society. Her major areas of research include prevention of dementia, polypharmacy, falls and long-term care for the elderly, etc. She has been studying geriatric or gerontological nursing for decades and is currently conducting a research project on prevention of dementia supported by National Research Foundation of Korea.

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Potential application of human neural crest-derived nasal stem cells in models of Alzheimer's disease as a clinically applicable therapy

Jung Yeon Lim, Sang In Park, Soon A Park and Sung Won Kim
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Potential application of human neural crest-derived nasal stem cells in models of Alzheimer's disease as a clinically applicable therapy: Stem cell transplantation is a promising therapeutic strategy for the treatment of many neurological disorders. The therapeutic effects, however, are sometimes inconsistent and unpredictable. Human Neural Crest-Derived Nasal Stem Cells (hNCNSCs) are an excellent alternative source of adult stem cells for clinical use because they can be obtained easily by minimally invasive collection procedures and expanded rapidly ex vivo for transplantation. Moreover, the characteristics of hNCNSCs, including their proliferation, differentiation and immunophenotype are not affected by donor age or passage number, while other kinds of stem cells exhibit age and passage-related reduction in multiple characteristics. In the present study, we investigated its potential for treatment of Alzheimer's Disease (AD) in comparison with Human Bone Marrow-Derived Mesenchymal Stem Cells (hBMSCs), which is the most commonly used cell type for regenerative medicine. Here, hNCNSCs is protective against amyloid-β peptide (Aβ1-42) toxicity in culture of human Neural Stem Cells (hNSCs). Likewise, in a transgenic mouse model of AD, transplantation of hNCNSCs greatly reduces the levels of Aβ42, plaque formation and inflammatory microglia expression, concomitant with increased survival of hippocampal and cortex neurons when compared with transplantation of hBMSCs. In addition, hNCNSCs showed better cell survival and greater inhibition in Aβ1-42-induced up-regulation of the BDNF pro-domain and their receptor p75NTR in a mouse brain of AD. These results suggest that the potential application of hNCNSCs of future treatment for patients with AD.

Biography

Jung Yeon Lim has completed her PhD from Department of Neurobiology, The Catholic University of Korea and Postdoctoral studies from the Catholic University of Korea and University of Cambridge, UK. She is a Research Professor in Postech-Catholic Biomedical Engineering Institute, The Catholic University of Korea. She was mainly involved in numerous publications relating to high performance stem cells therapy for treatment of serious neurological diseases such as strokes, spinal cord injury and Alzheimer's disease. Moreover, she has investigated the function of the nerve support factor called BDNF and its possible role in Alzheimer's disease.

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Effect of ETAS in pre-dementia cognitive disorder in young age

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Background & Aims: Young Onset Dementia (YOD) is the term used to define the cognitive disorder in the persons under 65. YOD is grown with age. In the age of 30-44, 1 of 1,500 suffers from dementia, in the age of 45-64, 1 of 750. Clinical signs at YOD are more variable than at Old Onset Dementia (OOD). These are depression, apathy, anxiety, sleep disorder. They are not associated with cognitive deficit. Assessment at YOD differs from OOD and includes collection of information of the patient and his family, neurological status, the more wide range of cognitive disorder assessment and neuroimaging. The aim is to research effect of ETAS on the major non-cognitive disorder in young patients with early dementia.

Methods: 12 patients (6 men and 6 women) of 44-62 with early dementia were assessed. The patients were divided in three groups according to the leading symptom: (1) 4 persons (33.3%) with depression and apathy, (2) 4 persons (33.3%) with asthenia anxious disorder and (3) 4 persons (33.3%) with expressed sleep disorder. Neurological status was assessed, neuropsychological testing, MRI (brain, cerebral and neck vessels) were performed before and after treatment. All patients received ETAS (1,000 mg per a day, in the evening) for 12 weeks.

Results & Conclusion: According to the study results the best response to the therapy was shown by the sleep disorder and anxiety group (72%), the major symptoms were reversed, the cognitive functions were improved. It means that at affectivity reduced (mood is normalized) cognitive facilities are increased. The less effect was shown by the patients with depression (40%), maybe, the more long treatment is required. ETAS is recommended at early dementia for timely correction of non-cognitive disorder as a medication improving higher cortical functions, emotional sphere, personal psychological constitution and neurophysiological measures in the whole.

Biography

Natalia Mikhaylichenco has completed Neurology Clinical Residency at Vladivostok State Medical University from 1985-1987 and Vladivostok State Medical University (1979-1985), having work experience in Psychiatry and Neurology Department at Pacific State Medical University. She is the Director of Nevron International Medical Center, since 1997, Director of Vladivostok Child Hospital (1993-1997) and Neurologist, Head of Neurology Department and Vladivostok Child Hospital (1987-1993).

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Brain insulin resistance: Targeting PI3K/AKT/GSK3-β pathway in intra cerebroventricular streptozocin induced rat model of Alzheimer's disease

Ansab Akhtar
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Alzheimer's disease featuring dementia, cognitive deficits and behavioral alterations is one of the most common prevalent neurodegenerative diseases affecting majorly elderly people termed as sporadic AD. Global prevalence of AD is sharply increasing, expected to affect almost 115 million people by 2050. Down-regulation of insulin signaling pathway of PI3K-AKT plays a significant role in the pathophysiology of AD. Intra cerebroventricular streptozocin is used for the model of sporadic Alzheimer's disease being established. Animals are divided into various groups comprising normal control, sham control, diseased and drug treated groups. Protocol lasts for 21 days, sacrificing animals on 22nd day followed by isolation of serum and dissection of cortex and hippocampus, preserving the same for further analysis. Behavioral studies, biochemical estimations and molecular techniques are done for evaluating several parameters of control, diseased and treated groups of animals. Behavioral studies like Morris water maze, novel object recognition and actophotometer are performed for cognition, memory and locomotor activity. Biochemical estimations for antioxidant activity are performed as glutathione reductase assay, catalase assay, glutathione S-transferase assay, lipid peroxidation assay, superoxide dismutase assay and protein carbonylation assay. Protein concentrations are determined by biuret method. Cholinergic activity is determined by acetylcholinesterase assay. Inflammatory cytokines like TNF-α, IL-6 is determined by ELISA method. Mitochondrial dysfunction is evaluated estimating mitochondrial enzyme complex 1, 2, 3 and 4. Histopathology is done. Molecular techniques like western blotting for Akt protein and RT-PCR for PI3-K, AKT, p-AKT, NF-κβ and GSK 3-β is performed for gene expression analysis.

Biography

Ansab Akhtar has received his BPharma from Jamia Hamdard University and MS degree from NIPER, Hyderabad. Currently he is pursuing his PhD in Pharmacology from University Institute of Pharmaceutical Sciences Panjab University, Chandigarh, India.

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Accepted Abstracts

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The effect of person-centred dementia care in a daycare setting: Pilot study

Saadiya Hurzuk
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Introduction & Aim: Dementia is a source of immense caregiver stress and exhausts social, financial, physical and emotional resources over time. Person-centered care is a holistic approach which includes a broad range of individual and group activities and counseling of caregivers in a friendly, empathetic environment is considered to be a useful method of managing patients and families with dementia. In this study we aimed to study the efficacy of person-centered dementia care on behavioral problems and Quality of Life of the patients. We also aimed to study the effect of person-centered dementia care on burden, stress, depression and anxiety of the primary caregivers.

Methods: 10 persons with dementia and their respective family caregivers who received person-centered care in ARDSI Hyderabad Deccan activity centre were compared with a control group of dementia patients. Behavioral problems in patients were studied using Neuropsychiatric Inventory (NPI) and Quality of Life was measured using Quality of Life for Alzheimer-Dementia Scale (QOL-AD). Carer burden was evaluated using the short Zarit Burden Inventory (ZBI) and carer depression, anxiety and stress were measured with the Depression, Anxiety and Stress Scale (DASS-21). Two groups of patients were matched on disease severity and efficacy of person centered care was compared between the two groups.

Results: Patients who were given person-centered dementia care in the activity center found to have more score on Quality Of Life-Alzheimer's Dementia Scale and less symptoms on NPI compared to those who did not attend. Caregivers of patients who attend activity center showed significantly lower levels of burden, depression, anxiety and stress.

Conclusion: Person-centered dementia care in activity center has a positive effect on quality of life of patients with dementia and successful carer interventions helps in reducing the burden, depression, anxiety and stress levels of the caregiver.

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Assessment of pure compound delineating ageing: Targeting receptor of advanced glycation end products

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Background: Advanced glycation end products are complex heterogenous compound that is major contributing factor in the progression of age-related complications such as Parkinson and Alzheimer's disease. However, to facilitate potent antiglycation activity, we have worked on in vivo ex vivo and in vitro glycation model while using potent inhibitory pure compound obtained from natural sources.

Aims: To limit rate to glycation induced devastating pathologies such as cellular damage, ageing through non-pharmacological interventions. Evaluating therapeutic potential of pure compound against glycation induced animal model by monitoring their blood haemoglobin level and cognitive activities by measuring CML level in brain with controlled and glycated animal model ensuring test compound potential activity at appropriate regimen.

Method: The in vitro assay carried out following bovine serum albumin with fructose. AGE's Fluorescence, Fructosamine adduct assay, Circular Dichroism (assessing protein aggregation), NBT and Thio-flavin t assays performed to assess structural modification of protein due to glycation with or without test compound. In vivo model included oral 10% fructose for 16 weeks, glycation effect measure through HbA1C level and some behavioural studies included Morris water maze for ensuring decline in cognition of glycated animal and with test compounds. Molecular level included induction of RAGE on macrophages using raw cells evaluating inhibitory effects of potential test compounds.

Result: In similarity with reaction mixture the fluorescence intensity of reaction mixture with inhibitor significantly reduced. The activity of pure compound has inhibited AGE's formation with dose dependent effects and IC50 was calculated. Data of in vitro assays is collected

Discussion: Using following reporting system for analysis of inhibition potential natural compound, we aim to make a novel entity targeting glycation induced diseases that may help to improve life span and quality of life in future.

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