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5th International Conference on

Alzheimer's Disease & Dementia

September 29-October 01, 2016 London, UK

Scientific Tracks & Abstracts

(Day 1)

Claire Henry, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
http://dx.doi.org/10.4172/2161-0460.C1.021

Managing behavioral disturbance with the dementia client through Person-centered care model

Claire Henry
Lourdes Memory Center, USA

Background: Person-centered care models regarding dementia care has demonstrated positive outcomes for behavioral disturbance.However, leadership, guidance and training on bringing this model into practice is lacking in our health care delivery system. The intent is to increase awareness and understanding about person-centered care for people with dementia. Discusses the complex needs of people with dementia, leading to compromised behavioral symptoms. Discussion includes sleep-wake-cycle disturbance, verbal outbursts and aggression. Further discussion encompasses evidence based outcomes with the use of Person-Centered Care that focuses on preserving the "personhood" of the individual.

Objectives: The learner will understand the role of Person Center Care for the dementia client. The learner will identify the difference between Person Centered Care and Task Centered and the significance of moving towards a Person Centered Approach to dementia care. Learners will develop necessary tools to manage challenging behaviors, and how Person Centered Care model can directly impact escalation of behavior symptoms. Learners will recognize that all behavior is a form of communication. The learner will develop necessary skills on communication techniques with the dementia client.

Biography

Claire Henry, Lourdes Memory Center Director whose aim is to enhance the quality of life for those individuals with Alzheimer's and other related behavioral diseases. Responsibilities include managing and coordination of all staff within the memory care unit; evaluating clinical service functions to provide optimum care for each individual resident within the Lourdes Center. Emphasis has been on developing partnerships with families and creating tailored resident care profiles which promotes the highest quality of care for each resident. Functions as an accomplished healthcare educator with demonstrated ability to teach, motivate clinicians, physicians and educators, while maintaining high interest and achievement. Articulate communicator who effectively interacts with diverse populations of healthcare professionals at a variety of academic levels.

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Depression predicts imminent conversion from mild cognitive impairment to Alzheimer´s disease

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Medical University of Innsbruck, Austria

Background: Mild cognitive impairment (MCI) has been suggested to represent a prodromal stage of dementia and confers a high risk for conversion to Alzheimer´s disease (AD). In this study, we examined the predictive value of depressive symptoms and neuropsychological variables on conversion of MCI to AD.

Methods: Our sample consisted of 260 MCI patients seen at the Psychiatric Memory Clinic of Innsbruck between 2005 and 2015. Neuropsychological and clincal data of the baseline and at least one follow-up visit were collected retrospectively. Depression was assessed using the Geriatric Depression Scale (GDS). Univariate and logistic regression analyses were performed.

Results: Of the 260 patients (mean age 71.5±7.7 years) 83 (32%) converted to AD within a mean follow-up time of 3.2± 2.2 years. The univariate ananlysis showed higher age and GDS score and lower MMSE, verbal memory, Boston naming and Clox I test scores at baseline in converting MCI compared to stable MCI patients. However, logistic regression analysis revealed solely depression, MMSE and verbal memory scores as significant predictors of imminent conversion from MCI to AD.

Conclusion: Our results support the previously reported predictive value of deficits in verbal memory and lower MMSE scores in the progression of AD. In addition, we found a strong negative influence of depression on MCI patients before imminent conversion to AD. These results emphasise the importance of depressive symptoms in early stages of AD and their possible impact on conversion from MCI to dementia stage.

Biography

Michaela Defrancesco has completed her university education in medicine and PhD in neuroscience in 2013 at the Innsbruck Medical University and finished her psychiatric residency in 2015. She is the head of the memory clinic of the psychiatric department of the University Clinic of Innsbruck. Her scientific work focuses on early signs and predictors of conversion from Mild cognitive impairment to Alzheimer´s disease.

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An interventional study to promote appropriate use of psychotropic drugs in care homes in people with dementia

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An estimated 90,000 people have dementia in Scotland in 2016 (Alzheimer Scotland, 2016). Two thirds of people with dementia live in the community while one third live in a care homes in UK (Alzheimer Society, 2014). The term stress and distress in dementia refer to the behavioural and psychological symptoms found to be present in people with dementia (Lee et al, 2004). 90% of people with dementia will experience these symptoms at some point (Robert et al, 2005).Psychotropic drugs are often inappropriately used to control these symptoms in spite of documented side effects of these drugs (Banerjee, 2009).The aim of this study is to explore the prescribing dynamics in care homes and assess the reason for prescribing psychotropic drugs in stress and distress; followed by development of an intervention to reduce the use of these drugs. The primary objectives are to explore staff awareness of stress and distress in dementia, their knowledge about the indications and side effects of psychotropic drugs. Secondary objective is to develop a staff training/education package.

The research will be mixed methods pre- and post-test study method. Quantitative data will be looking at the prescription rates of psychotropic drugs in care homes and measuring the knowledge and attitude of care staff towards stress and distress. Qualitative data will be collected by semi structured interviews to explore the objectives. An educational intervention to promote the use of alternative non-pharmacological interventions will be developed and tested. The outcome of the intervention will be evaluated by monitoring prescriptions trends.

Further, this is a unique study as nurse's attitude towards psychotropic drugs will be deeply explored. The Theory of planned behavior is followed as the theoretical framework and will be used to change attitude and behavior of care staff to use of psychotropic drugs. Following the themes identified, targeted intervention will be developed to act on the barriers of use of non-pharmacological management of stress and distress.

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Potential benefits of functional task exercise on cognition and functional status of older adults with mild Cognitive Impairment

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Regular exercise and participation in mentally stimulating and socially engaging activities are commonly recommended to help sustain brain functions particularly for older adults with mild cognitive impairment (MCI). People with MCI have an increased risk of developing dementia. Nevertheless, it is highly possible to delay the onset of dementia through interventions by slowing the rate of cognitive decline or improve the cognitive functions in persons with MCI. Previous studies have demonstrated combined cognitive and physical activities can induce a greater increase in neurogenesis, and may have additional effects in promoting cognitive functions. Daily functional tasks are innately cognitive-demanding and involve components of stretching, strengthening, balance and endurance as seen in a traditional exercise program. Functional task exercise, with an exercise component incorporated into everyday tasks may be more meaningful and practical for individuals with cognitive impairment. This presentation will illustrate this point using the results of a randomized controlled study investigated the potential benefits of a combined cognitive and exercise program, with functional task as intervention, on cognitive functions and functional status in 83 older adults with MCI. Significant differences have shown between the Functional Task Exercise group and the conventional cognitive training group in memory ($p<0.01$), executive function ($p<0.05$), and functional status ($p<0.05$). All improvements were maintained during 3 months follow-up. Furthermore, functional balance was found significantly improved for those in the Functional Task Exercise group ($p<0.05$). Important contributing factors and future directions of prevention interventions for person with MCI will be discussed.

Biography

Lawla Law has been graduated from the Hong Kong Polytechnic University as an Occupational Therapist and practiced for about 25 years with extensive experience in acute and community settings in Hong Kong and Australia. She completed her PhD from the James Cook University in Australia and has changed to work in academics since 2014. Presently she has been working as an Assistant Professor at the Tung Wah College in Hong Kong where she has continued her research. Her research interests are in Geriatric rehabilitations with a special emphasis on assessments and innovative interventions for cognitive impairment.

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Notes:

Sangeeta Semwal, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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Importance of developing skills of Dementia care workers for providing palliative care in Dementia

Sangeeta Semwal
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Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.

Palliative care is an approach which best endorses the aims of person-centred Dementia care. Dementia being a progressive irreversible clinical syndrome characterised by widespread impairment of mental function which may include memory loss, language impairment, disorientation, personality change, difficulties with activities of daily living, self-neglect and psychiatric syndromes requires a 360 degree care. Proper and accurate professional care plays a crucial role in dealing with patients with Dementia and their families and for this reason proper training and developing skills of Dementia Care workers is very important. Here, we will discuss the core features of good dementia care training and how they lead to good Dementia care. We will also discuss if the provision of training actually reduces the burden of caring for a family member with dementia by the family care giver as the family care givers play a vital role in the support of people with Dementia.

Biography

Sangeeta Semwal has completed her Masters in Clinical Psychology at the age of 23 years from Barkatullah University, Bhopal, India in 2008. At present,She is the director of Saathi Care & Nursing Pvt. Ltd. a company dedicated to wellbeing of elderly with and without Dementia. She has been actively working in the field of mental health from last 7 years and dedicated to Elder care from last 2 years and 10 months. Prior to Elder Care, she was involved in Special Education and Counselling for Army personals.

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Notes:

Aman Gupta et al., J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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To Investigate Role of Glycosylated Hemoglobin(HbA1C) as a Biomarker for prediction of Dementia &Cognitive Dysfunction in Type 2 Diabetic Patients

Aman Gupta, Abha Singh, Rakesh Gupta and **Ritu Jha**
Amity University, India

Introduction: Diabetes Mellitus is one the major disease burden globally. One of the significant complication of the uncontrolled Diabetics is Cognitive dysfunction &Dementia.In this study we laid focus on the Evaluation of HbA1C as a Biomarker to predict Dementia & Cognitive Dysfunction in Type 2 Diabetic Mellitus.

Aim of the study: A pilot study to investigate HbA1C as a Biomarker for prediction of Dementia & Cognitive Dysfunction in Type 2 Diabetic Mellitus in a Hospital Setting.

Methods and Results: A prevalence study in which 60 subjects (n=30 Type 2 Diabetics ; n = 30 non -Diabetic)were enrolled. In this study HbA1C values were correlated with that of individual memory & cognition batteries* score.

The mean values of HbA1C in the Diabetic group (n = 30) was found to be 9.19.The corresponding values of Pearson's Correlation "r" in the diabetic group of the wrt various Cognitive batteries were : General Practitioner Assessment of Cognition (GPCOG)= -0.53; Attendant Informant Tool(AI) = - 0.43;Memory Impairment Screen (MIS) = -0.37 ; MINI COG = -0.29. Negative values of the Pearson's Correlation "r" indicates that lower the respective battery score , poorer is the cognitive function.Similarly, in the non-Diabetic group (n =30),no significant Dementia &Cognitive Impairment was found when same group of Cognitive Batteries were administered.

Conclusion: It is quite evident from the results that HbA1C as biomarker has a great potential to predict Dementia & Cognitivedecline in uncontrolled Diabetes. However, the study needs to be conducted on a larger scale along with comparative analysis with tools like Functional MRI and other standard biomarkers.

Biography

Aman Gupta is involved in caring for patients with cognitive and behavioral problems. Dr. Gupta is running a Memory Clinic for people with problems resulting in decline in memory, confusion, depression etc.Dr. Gupta has completed his Visiting Fellowship –Functional MRI-- Harvard Medical School, Boston ,MA, USA. With a MD , followed up by Masters of Science- Clinical Research,Cranfield University ,School of Health,England, Dr. Gupta has been into Clinical practice over 12 years. Dr Gupta has been affiliated to Premier institutes like Sir GangaramHospital(Department of Neurology)New Delhi, MAX Health Care New Delhi, Banaras Hindu University on various projects. Currently he is conducting research on Dementia & Diabetic association as a PhD-Research Scholar at Amity Institute of Neuropsychology & Neurosciences, Amity University Uttar Pradesh, Noida, India.

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Notes:

Ananya Bagchi et al., J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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Pharmaceutical effect of *Murraya Koenigii* on Alzheimers disease - A review

Ananya Bagchi, Dillip Kumar Swain and **Analava Mitra**
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Alzheimer's disease (AD) is a disease which is being characterized by signs of major oxidative stress, the loss of cholinergic cells, depletion of Acetylcholine enzyme and the excessive activity of acetylcholinesterase enzyme.In this present review we are trying to investigate the role of the total alkaloidal extract and its predomidant carbazole alkaloid Mahanimbine from *Murraya koenigii* (MKA) leaves on age related oxidative stress, free radical scavenging activity and its effect in cholinergic pathway. The MKA helps to improve the level of protective antioxidants for free radicals scavenging activity such as glutathione peroxidase (GPx), reduced glutathione (GSH), glutathione such as reductase (GRD), superoxide dismutase (SOD) and catalase (CAT) in brain tissues. Interestingly a significant progress can be found with the addition of *Murraya koenigii* leaf extract,in improving the acetylcholine (ACh) level and reducing the acetylcholinesterase (AChE) activity in Alzheimer's diseased mouse brain. On the other hand in several studies it was found that a carbazole alkaloid of *Murraya koenigii* which is known as mahanimbine [3, 5-dimethyl-3-(4- methylpent-3-enyl)-11H-pyrano [5, 6-a] carbazole], can Inhibit AChE activity which was being proved by Ellman's method .A review on AChE inhibitory activity of this carbazole alkaloid has not been reported so far, and this review will help to study this activity of carbazole alkaloid mahanimbine, isolated from *Murraya koenigii* in preventing Alzheimer's disease.

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Azza A Ali, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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Risk factors in induction and progression of Alzheimer's disease: Impact on protection and disease-modifying factors

Azza A Ali
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Overview of Alzheimer's disease and its Progression:

Alzheimer's disease (AD) is a progressive neurodegenerative disorder that leads to memory loss and nerve cell death throughout the brain. It is a growing public health problem with major socioeconomic burden and often causes complications resulting in death. AD progresses gradually, the progression of the disease is time dependent and just starts spread spontaneously. The rate of progression varies greatly; brain shrinks dramatically over time, plaques and tangles spread affecting nearly all brain functions. There is a lack of data in understanding AD progression. Typically, it progresses slowly in three general stages mild, moderate and severe. In its early stages memory loss is mild, but with late-stage AD individuals lose the ability to carry on a conversation and respond to their environment. Scientists hope to model stages and progression of AD. By identifying the stage of the disease, prediction is possible, symptoms can be expected and the power to find real treatment will be enhanced.

Alzheimer's disease Risk Factors:

Much attention has been paid to AD risk factors and disease-modifying factors. A number of factors may increase the chances of developing the disease. Some risk factors can be changed or controlled while others cannot. Risk factors mainly include age, genetics, environment and lifestyle. The majority of AD occurs as a result of complex interactions among genes and other risk factors. A connection has been found between a gene called Apolipoprotein E (ApoE) and the development of AD. Modifiable or controlled risk factors include stress, heavy smoking, excessive alcohol drinking, depression, cognitive inactivity or low education, malnutrition and physical inactivity. Exposure to stress represents a risk factor in induction and progression of AD especially in the developed countries, while protein malnutrition (PM) which increases the severity and progression of AD represents socioeconomic problem in the third world and developing countries. On the other hand, researchers believe that depression is a risk factor, whereas others believe it may be an early symptom of the disease. Other medical conditions that can increase chances of developing dementia include diabetes, high blood pressure, obesity, Parkinson's disease, Down syndrome and some other learning disabilities. The risk of developing AD or vascular dementia appears to be increased by conditions that damage the heart or blood vessels. Scientists hope to prevent or delay AD especially in the high-risk individuals.

Protection and Disease-Modifying Factors:

Healthy aging and lifestyle can help reduce the risk of Alzheimer's disease and other dementias. Cognitive engagement, physical activities, reduce stress, quitting or reducing smoking, avoid excessive alcohol consumption have been associated with decreased risk of AD. Healthy food as well as dietary supplementation of antioxidants, B vitamins, polyphenols, polyunsaturated fatty acids, Zinc and moderate coffee drinking can reduce AD incidence and provide protection. Although the mechanisms of these nutrients on AD are not clear, but reducing oxidative stress, inflammatory mediators and both Aβ & tau pathologies can attenuate cognitive deterioration.

On the other hand, some combined treatments showed marked protective effects rather than individual treatments in animal experimental models especially with risk factors. For example, combined therapy of Epigallocatechin-3-gallate (EGCG) and coenzyme Q10 (CoQ10), EGCG and vitamin E & selenium, combined use of vitamin C and vitamin E as well as co-administration of caffeine and nicotine. The deleterious effect of stress on the brain can be also counteracted by using both EGCG and Diazepam. However, further researches are needed to improve the quality of evidence associated with the reduction of AD prevalence and incidence.

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A Major Early Driver of Tauopathy and Neurodegeneration that is Blocked by Antibody

Shahpasand K[1], **Kondo A**[2], **Zhou XZ**[2], and **Lu KP**[2]
[1]Royan Institute for Stem Cell Biology and Technology, Iran
[2]Cancer Research Institute, Boston

Traumatic brain injury (TBI) is the best-known environmental risk factor for Alzheimer's disease (AD), whose defining pathologic features include tauopathy made of hyperphosphorylated tau (PHF-tau) and is characterized by acute neurological dysfunction. However, tauopathy is undetectable acutely after TBI and how TBI leads to tauopathy which in turn would increase risk of AD is unknown. Here we identify a neurotoxic cis conformation of phosphorylated tau at Thr231 as a major early driver of TBI and neurodegeneration that is effectively blocked by the conformation specific monoclonal antibody. We found robust cis p-tau after sport- and military-related TBI in humans and mice. Acutely after TBI in mice and stress *in vitro*, neurons prominently produce cis p-tau, which disrupts axonal microtubule network and transport, spreads to other neurons, and leads to apoptosis, a pathogenic process, which we nominated "cistauosis" that appears long before known tauopathy. Treating TBI mice with cis antibody not only blocks early cistauosis, but also prevents tauopathy development and spread, and restores brain histopathological and functional outcomes. These results uncover cistausosis as an early precursor of tauopathy and an early marker of neurodegeneration after sport and military TBI. We anticipate that cis p-tau will be a new early biomarker and that cis p-tau antibody or vaccines may be used to treat or even prevent TBI, chronic traumatic encephalopathy and AD.

Biography

Koorosh Shahpasand has completed his PhD from Tokyo Metropolitan University in 2012, and did his postdoctoral training at Harvard Medical School on the elucitation of cis/trans p-tau conformations during Neurodegeneration; the results of which have been published in Nature. He is now freshly employed assistant professor at Royan Institute and supervising several research projects related to tauopathies. Notably, he has been recently awarded by a prestigous grant from Alzheimer's Association at Chicago.

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Special Session

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Lew Lim
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Neurofeedback

Neurofeedback (NFB), also called neurotherapy or neurobiofeedback, is a type of biofeedback that uses real-time displays of brain activity—most commonly electroencephalography (EEG), to teach self-regulation of brain function. Typically, sensors are placed on the scalp to measure activity, with measurements displayed using video displays or sound – to track positive neuroplasticity, the potential that the brain has to reorganize and create new neural pathways.

Vielight Inc and Quietmind Foundation are currently in partnership to develop QEEG and brain mapping software that work in sync with the Vielight Neuro.

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Workshop

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David Truswell
Central and North West London NHS Foundation Trust, UK

Wake up London – Raising awareness of dementia in London's Black, Asian and Minority ethnic communities

The UK Prime Minister's Challenge on Dementia for 2020 drew attention to the implications of living with dementia for black, Asian and minority ethnic communities in London. The Mental Health Foundation and CNWL Trust held an expert seminar in 2015 involving voluntary sector organisations working with raising dementia awareness to explore common experience and share good practice. 'Wake Up London' a paper produced based on the seminar looks at the challenges presented to some of the largest older minority-ethnic communities in the UK and some of the recent initiatives across the capital that are tackling the issues. The seminar group's discussions and follow-up work produced Race Against Dementia a national Call for Action to create a co-ordinated approach to raising awareness about dementia in Black, Asian and minority communities supported by a comprehensive account of good practice success stories with a variety of community groups.

Biography

David has worked for over thirty years in the UK developing community services for people with complex care needs and enduring mental health problems in a career spanning the voluntary sector, local authority and the NHS. From 2005 to 2008 he led the Delivering Race Equality programme in the CNWL Foundation Trust (one of the largest NHS Trusts in the UK). From 2009 - 2011 was the Dementia Implementation Lead for Commissioning Support for London. More recently he has developed a role as an independent writer and advisor on dementia support and services for Black, Asian and minority ethnic communities.

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T Y Chang, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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ACAT1/SOAT1 as a therapeutic target for Alzheimer's disease

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Alzheimer's disease (AD) is the most common cause of dementia with no cure at present. Cholesterol metabolism is closely associated with AD at several stages. While brain only accounts for 2-3% of the body weight, it occupies 25% of the total body cholesterol.Cholesterol ester (CE) is the storage form of cholesterol. In normal brains, CE levels are less than 1% of free, unesterified cholesterol. However, in the vulnerable regions of brain samples from late-onset AD patients, CE levels were 80% higher; in the brains of three AD mouse models, the CE levels rose to values 3 to 11 fold higher than those in control mice. In addition, when fed with a high-cholesterol diet, the brain CE content in human ApoE4 knock-in mice was 3-fold higher than that in human ApoE3 knock-in mice. These observations suggest a causal relationship between AD and increased CE content in the brain. Acyl-CoA:cholesterol acyltransferase 1 (ACAT1) converts free cholesterol to cholesteryl esters, and plays important roles in cellular cholesterol homeostasisin various tissues including the brain. Recent studies show that in a mouse model, blocking ACAT1 provides multiple beneficial effects on AD. Here I review the current evidence that implicates ACAT1 as a therapeutic target for AD. I also discuss the potential usage of various ACAT inhibitors currently available to treat AD.

Biography

Chang is internationally known for his research work in the cholesterol metabolism field. His laboratory did ground breaking work on the key cholesterol storage enzyme acyl-CoA:cholesterol acyltransferase 1 (ACAT1/SOAT1). He and his colleagues identified the Acat1/Soat1 gene, performed functional analysis of the enzyme, and demonstrated Acat1/Soat1 as a target for treating several human diseases including Alzheimer's disease. Dr. Changhas served as an editorial board member of several major scientific journals, and as a review panel member for NIH. He received an NIH Merit Award in 1994, and was elected AAAS Fellow in 2011.

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Imputation and Censored Covariate: Application to Alzheimer Study

Folefac Atem
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The association between maternal age of onset of dementia and beta-amyloid deposition (measured by *in vivo* PET imaging) in cognitively normal older offspring is of interest. In a regression model for beta-amyloid, special methods are required due to the random right censoring of the covariate of maternal age of onset of dementia. Prior literature has proposed methods to address the problem of censoring due to assay limit of detection, but not random censoring. We propose imputation methods and a survival regression method that do not require parametric assumptions about the distribution of the censored covariate. Existing imputation methods address missing covariates, but not right censored covariates. In simulation studies, we compare these methods to the simple, but inefficient complete case analysis, and to thresholding approaches. We apply the methods to the Alzheimer's study.

Biography

Folefac Atem, PhD, MS is a Biostatistician. Dr. Atem is an Assistant Professor in the Department of Biostatistics at the University of Texas Health Science Center at Houston. His office is located at UT Southwestern medical school. He completed his PhD from the University of Pittsburgh in 2010 and Postdoc at Harvard in 2014.

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A scFv antibody targeting common oligomeric epitope has potential for treating several amyloidoses

Xiao-lin Yu, Jun Zha, Xiang-meng Liu, Jie Zhu, Shuai Lu, Peng-xin Xu and **Rui-tian Liu**
Chinese Academy of Sciences, China

Overproduction or poor clearance of amyloids lead to amyloid aggregation and even amyloidosis development. Different amyloids may interact synergistically to promote their aggregation and accelerate pathology in amyloidoses. Amyloid oligomers assembled from different amyloids share common structures and epitopes, and are considered the most toxic species in the pathologic processes of amyloidoses, which suggests that an agent targeting the common epitope of toxic oligomers could provide benefit to several amyloidoses. Here we firstly showed that an oligomer-specific single-chain variable fragment antibody, W20 simultaneously attenuated motor and cognitive decline in Parkinson's disease and Huntington's disease mouse models, and ameliorated neuropathology by reducing α-synuclein and mutant huntingtin protein aggregate load and preventing synaptic degeneration. Neuroinflammation and oxidative stress *in vivo* were also markedly attenuated. The proposed strategy targeting the common epitopes of amyloid oligomers presents promising potential for treating Parkinson's disease, Huntington's disease, Alzheimer's disease, and other amyloidoses.

Biography

Xiao-lin Yu has completed her PhD from Peking University Health Science Center and postdoctoral studies from National Institutes of Health, USA. She is an associate professor of biotechnological drug engineering in Institute of Process Engineering. She has published more than 10 papers in reputed journals.

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Rivastigmine and Citalopram treatment for Alzheimer's disease (AD) in daily clinical practice

Krishna Prasad Pathak
Amity Global Education, Nepal

Background: Pharmacological treatment for AD and depression are unfortunately few and of limited efficacy to cure the disease.

Objectives: To assess the combined effects of rivastigmine and citalopram on Alzheimer's Disease.

Methods: Longitudinal clinical prospective study with 1278 AD patients on rivastigmine 9,5mg/patch and citalopram 20-40 mg/day over 48 months was assessed on the basis of DSM-IV, NINCDS-ADRDA, MMSE, FRSSD, GDS, HRS-D and follow up of the patients.

Results: Four years after the baseline assessment, there were no significant differences in MMSE, Geriatric depression scale and Hamilton rating scale for depression between patients treated with rivastigmine alone or combined rivastigmine with citalopram with or without depression ($p>0.05$). Functional Rating Scale for symptoms of dementia, Activities of Daily Living of patients with AD and depression treated with rivastigmine was significantly worse than patients treated with rivastigmine and no depression ($p=0.027$).

Conclusions: The combination of rivastigmine and citalopram had no better results than rivastigmine alone in patients with AD.

Biography

Krishna prasad pathak has completed PhD at the age of 35 years from Macedoniya university and doing research work on demenita issue in Nepal. He is the lecturer of Amity Global education , kathmandu Nepal. He has published some papers in reputed journals and has been serving as an editorial board member.

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Chalcogen-richorganic molecular probes for intended neurodegenerative disease purposes

David G Churchill
KAIST, Republic of Korea

In the pursuit of advances in neurodegenerative disease research, our laboratory is currently working on chemical synthesis along three directions: protein phosphorylation and phosphate/phosphonylation detection, aromatic organoselenium-based chemistry, and MRI contrast agent technologies are all active areas in our chemical laboratory. In our organoselenium work, we are interested in making next-generation small molecular probes for the detection of reactive oxygen species. We are pursuing reversibility, as well as improved selectivity and sensitivity. This is undertaken in the context of also studying biothiols. Sulfur, selenium, or tellurium canbe placed within a ring, and within a π-delocalized manifold for chemical oxidation, or also as a substituent on the aromatic ring. This oxidation, as observed previously by M. Detty et al. (1990), imparts a significant electronic effect on the π-delocalized system and is enough to dramatically alter photophysical properties ("turn-on" fluorescence). The chemical oxidation of an "in-ring" selenium or tellurium also brings with it a possible concomitant sterical contribution that is also important. We have taken to functionalizing BODIPY systems–an extension of research from seeking new corrole chemistry. Recently, we have opened up to using other fluorophores; two general design parameters that are often exploited are (i) the aryl rotational group and (ii) the donor-acceptor photoinduced electron transfer (PET) mechanism. Based on previous results, we saw that profound differences can be imparted by substituting a thiophene for a phenyl group. Further, substituting Se in place of S, or adding gearing groups help alter the PET mechanism–a strategy that can be combined with chalcogen chemical oxidation/reduction. We often conduct many interference studies and cuvette assays, but also consider the probe when taken up into living cells, especially those of relevance to neurological diseases. Also, some of our work has ties with Fenton chemistry. New π-delocalized skeletons that we discover can be further exploited within the topic of molecular sensing. As always, synthesis is central to our work and emergent utility of these materials is being pursued.

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Alzheimer's Disease & Dementia

September 29-October 01, 2016 London, UK

Scientific Tracks & Abstracts

(Day 2)

Mourad Tayebi, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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Neuroprotective and Neurorestorative effects of disease-modifying single-domain Antibody fragments in Aged Beagles

Mourad Tayebi
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An active and promising area of research for Alzheimer's disease (AD) is immunotherapy using antigens (active) or antibodies (passive) that target AD neuropathology. Senile plaques contain the beta-amyloid (Aβ) peptide that is derived from a longer precursor protein, amyloid precursor protein. Amyloid beta is produced as either a 40 or 42 amino acid peptide, the latter being more fibrillogenic and toxic than the shorter isoform. Initially produced as a soluble peptide, Aβ subsequently can form oligomers, a molecular complex of monomer units. Aβ oligomers are highly toxic to neurons and particularly damaging to synapses. There is strong evidence that oligomer accumulation may seed plaque aggregation and serves as an early molecular target for preventing AD. Interestingly, oligomers can be detected by antibodies based upon structure with less of a need to target the amino acid sequence of an individual protein making antibody development for oligomers a fascinating area to pursue. Antibodies developed against oligomers may be able to bind several misfolded proteins implicated in neurodegenerative diseases.

Immunotherapy studies have typically used transgenic mouse models of AD, and subsequently translated to human clinical trials. However, the success rate of these translational studies has been limited. In contrast, studies in another animal model, the aged canine, indicated that immunotherapy led to similar outcomes in AD clinical trials; reduced Aβ plaque pathology with no improvements in cognition but indications of a slowing of cognitive decline.

We have previously developed and characterized unique anti-Aβ single domain antibodies derived from camelids. These antibodies, we called PRIOAD, were able to (i) cross the *in vitro* and *in vivo* blood brain brain (BBB) in mice rats and *in vitro* human BBB model; (ii) bind with high affinity to soluble oligomers derived from synthetic and native human Aβ but not their monomeric and fibrils counterparts; and (iii) not induce neurotoxic effects and host immune responses in mice.

PRIOADs were evaluated for their therapeutic efficacy in a pilot sutdy using aged beagles with mild cognitive impairment. Following intraventricular infusion of PRIOAD for 3 months, there was a significant reduction of Aβ plaque burden in these animals. More importanly, PRIOADs led to reversal of the cognitive deficits in beagles.

The study was very encouraging and will be expanded to include larger number of animal cohorts prior to translation into human clinical trials.

Biography

Tayebi is a Senior academic at the University of Melbourne and heads the protein misfolding disease group. Dr Tayebi has previously very successfully led to startup biotechnology companies in the UK and the US.

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Recovery and immunological properties of "Cerebral" under the acute stroke

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The aim of this work was to study the influence of "Cerebral" on the animal's conditions after experimental stroke and on the humoral and cell parts of immunity. We administrated "Cerebral" intraperitoneally to 26 adult guinea pigs with experimental model of hemorrhage stroke twice with the interval of 6 days. Also, the work was conducted on 30 white mice for the study of immune reaction. On the 14th – 16th days since the administration of "Cerebral" to guinea pigs considerable improvement in the state of animals was noted: limb movement recovered, disorders of coordinatation disappeared, tissue trophism and weight normalized. The animals perform motor and coordinator tests confidently. Establishment of possible immunotoxical peculiarities an obligate for any new potential medical medicine. "Cerebral" changes the development of thymus-dependent antigen reaction and hypersensibility of slow tape (SST) reaction, but doesn't impact on the process of antibody formation (according to levels of hemolysins and hemoglutinins). "Cerebral" doesn't have negative influence on the revealed immunity indexes.

Biography

Makarenko O.M has taken PhD degree at the age of 30 at the Moscow Medical Stomatological Institute, M.D. degree at the age of 40 at the Institute of Higher Nervous Activity in Moscow. He carries out his post-doc researches at the Institute of higher nervous activity and Taras Shevchenko National University of Kyiv. He is a professor of the psychology department, the author of more than 200 articles in reputed journals and 5 monographs.

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QI Xinyang, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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The projection from postrhinal cortex to ventral lateral orbitofrontal cortex impacts on spatial memory

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Background: Over the past decades, great effort has been spending on research of Alzheimer disease (AD), many scientists focus on the predictors of AD. Spatial memory deficits have been recognized in the early stages of AD, but have been studied less[1]. The previous studies have shown a cloes relationship between spatial memory and postrhinal cortex (POR)[2], but which projection from POR impacts on spatial memory is still to be found out. So with the help of optogenetics, we can do further research.

Purpose: To find out which projection from POR impacts on spatial memory.

Methods: Using optogenetics to control neuron activity, using novel object recognition to test the spatial memory performance of mice, using immunofluorescence of c-Fos to search the terminal cortex, choose 3-month C57BL/6 mouse.

Results: In novel object recognition testing, when inhibiting glutamatergic neurons activity of POR in both study and recognition phase, the spatial memory level of experimental group is lower than matched group ($t=2.38$, $P<0.05$); when inhibiting glutamatergic neurons activity of POR only in study phase, there is no significant differences in both group ($t=7.68$, $P>0.05$); when inhibiting glutamatergic neurons activity of POR only in recognition phase, the spatial memory level of experimental group is lower than matched group ($t=3.23$, $P<0.05$). 1.5h after optical stimulation, immunofluorescence of c-Fos shows that c-Fos positive neurons of ventral lateral orbitofrantal cortex (OFC) in experimental group is less than matched group ($t=2.87$, $P<0.05$).

Conclusion: The projection from POR to OFC impacts on the recognition phase of spatial memory via glutamatergic neuron.

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Ins2 gene expression and function in the mouse brain

Sunday A Ajayi, Derek A Dionne, Daria F Hutchinson, Melissa M Page, Sanja Soo, Shernaz X Bamji and **James D Johnson**
University of British Columbia, Canada

Insulin deficiency and insulin resistance has both been reported in Alzheimer's disease. This study was designed to examine whether insulin protein or markers of insulin promoter activity can be observed in the mouse brain and to also determine the effects of brain-specific insulin gene (*Ins2*) knockout on behaviour to ascertain the possible role of insulin produced locally in the brain. We have employed germline *Ins2* knockout mice (*Ins2*-/-), heterozygous mutant mice ($Ins2^{+/-}$), and their wildtype littermate controls ($Ins2^{+/+}$), as well as cell type specific *Ins2* knockout mice derived by crossing NesCre, SynCre, or CamkCre mice with mice harboring a floxed *Ins2* allele (on the Ins1-/- background). Mice were genotyped using PCR. Insulin mRNA analysis using qPCR confirmed the deletion of the Ins2 gene in the germline knockout animals, but revealed a paradoxical increase in *Ins2* mRNA in many brain regions of the $Ins1^{-/-}$:$Ins2^{f/f}$:NesCre, $Ins1^{-/-}$:$Ins2^{f/f}$:SynCre, $Ins1^{-/-}$:$Ins2^{f/f}$:CamkCre, relative to their littermate controls, suggesting an upregulation of Ins2 production from non-neuronal cell types within the brain. Indeed, analysis of *Ins2* gene activity using $Ins2^{GFP}$ knock-in mice suggested the presence of *Ins2* in non-neuronal cell types surrounding the ventricles. Interestingly, preliminary behavioural studies (Y-maze, open field test, familiar object test, and Morris water maze) identified differences in learning and memory in mice lacking *Ins2* expression in the brain. Collectively, these results suggest that *Ins2* is expressed in both neuronal and non-neuronal cell types within the brain, where it has complex roles modulating behavior. This work may shed light on the role of insulin in Alzheimer's disease.

Biography

Sunday A. Ajayi completed his PhD at Obafemi Awolowo University, Ile-Ife, Nigeria in 2012 and moved to University of KwaZulu-Natal, Durban South Africa between 2013 and 2015 for Postdoctoal Fellowship. In 2016 he relocated to Vancouver, Canada where he is presently a Postdoctoral Fellow sponsored by IBRO-ISN Research Fellowship in the Laboratory of Professor James D. Johnson at the University of British Columbia.

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Shahnawaz Ali Bhat et al., J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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Platelet CD40L mediates activation of Astrocytes and Microglia culminating in Neuronal injury in brain regions associated with Memory functions during Chronic Hypertension

Shahnawaz Ali Bhat, Ruby Goel, Rakesh Shukla and **Kashif Hanif**
CSIR-Central Drug Research Institute, India

Studies have reported hypertension as a prominent risk factor for dementia. Further, earlier reports have separately demonstrated that chronic hypertension is associated with platelet activation in periphery (resulting in accumulation and localized inflammatory response) and glial activation in brain. We investigated the contribution of platelets in brain inflammation, particularly glial activation and associated neuronal injury *in vitro* and in a rat model of chronic hypertension. We found that chronic HTN increased the expression of adhesion molecules like JAM-1, ICAM-1 and VCAM-1 on brain endothelium and resulted in the deposition of platelets in brain. Platelet deposition in chronic hypertension was associated with the augmented CD40 and CD40L and activation of astrocytes (GFAP expression) and microglia (Iba-1 expression) and increased caspase 3 expression and more TUNEL positive cells in the brain. Platelets isolated from hypertensive rats had significantly higher sCD40L level and induced prominent glial activation than platelets from normotensive rats. Moreover, CD40L induced astrocyte and microglia activation and NFκB and MAPK inflammatory signaling, with subsequent release of inflammatory TNF-α. Remarkably, conditioned media from CD40L activated glia induced the apoptosis in neuronal cells, Neuro2A (evidenced by increased Annexin V/PI +ve cells via flowcytometry). On the contrary, inhibition of platelet activation by clopidogrel or disruption of CD40 signaling prevented astrocyte and microglial activation and provided neuroprotection in both *in vivo* and *in vitro* conditions. Thus, we have identified platelet CD40L as a key inflammatory molecule for the induction of astrocytes and microglia activation, the major contributors of inflammation mediated neurodegeneration in brain.

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Effect of Medlar (*Mespilus germanica* L) fruit and seed flavonoids on learning and memory and also hippocampal CA3 neurons in Alzheimer's rats

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[2]Shahid Beheshti University of Medical Sciences, Iran

Introduction: Alzheimer's disease is significantly developing and there is no decisive treatment for that. So, it is urged to prevent in early stages. In present study, the effect of *M.germanica* fruit and seed flavonoids on learning and memory and hippocampal CA3 pyramidal neurons in Streptozotocin-induced Alzheimer's rats have been studied.

Methods: *M.germanica* flavonids were extracted and identified by 2-Dimensional Paper Chromatography and Thin Layer Chromatography. Experimental groups including: 1. Control group, 2. STZ group, 3. STZ + 10 dose of *M.germanica* flavonoids group, and finally Pure flavonoids. STZ-i.c.v (10µl) in all groups except control group was injected at first and third days after surgery beside that, Intraperitoneal injection of flavonoids in all groups except control group, was performed everyday during the 21days. Control group received injection of saline. Afterwards was performed inhibitory avoidance test by shuttle box and immediately after that through perfusion, brains were separated to investigate hippocampal CA3 neurons. To inspect of behavioral data, we used SPSS (analysis one way ANOVA) and regarding the tissues data we used Prism.

Results: *M.germanica* flavonoids in STZ+10mg/kg flavonoids group can restrict significantly deficiency in learning and memory and also improve neural damages in CA3 induced by STZ ($p<0.001$).

Conclusion: Accordingly, it seems that *M.germanica* due to high levels of flavonoids provide useful efficacy on prevention of memorial loss and injury of neurons by STZ-icv and makes a potential in treatment of neurodegenerative diseases specially in Alzheimer's disease.

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Development of combined therapy for Alzheimer's disease: A mechanistic study

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University of South Australia, Australia

Alzheimer's disease (AD) is one of most devastating diseases affecting elderly people, Amyloid-β (Aβ) accumulation and the downstream pathological events such as Tau phosphorylation play critical roles in ADpathogenesis. Edaravone is marketed for acute ischemic stroke, has been proved for its capacity of inhibiting Aβ aggregation and attenuating Aβ-induced oxidation *in vitro*. According to MTT assay, EDA has shown strong protection effect against cytotoxicity induced by CuSO4 and H2O2 on SY5Y695 cells. In the neurite outgrowth assay, the cortex neuron isolated from C57 pups were treated with 1uM Aβ42 in the presence of different concentration of EDA, data shows the neurite length of EDA 3uM group increased to 30% to the control group and two folders high then the Aβ only group. The PI staining apoptosis assay also indicated that cells treated with EDA in differently concentration significantly reduced the death caused by CuSO4.In addition, P25/35 ratio is also changed in EDA treatment group, in the 3uM EDA group, P35 expression is significant increase while P25 decease 2 folders. Acetylcholinesterase (AChE) are enzymes that hydrolyze the neurotransmitter acetylcholine (ACh) to acetate and choline, the AChE is often found to be highly active in AD pathology, according the AchE activity assay, the pilot result shows suppression effect of EDA on AchE activity *in vitro*.

The ectodomain of p75 neurotrophin receptor (p75NTR-ECD) has been suggested to play important roles in regulating beta-amyloid (Aβ) deposition and in protecting neurons from the toxicity of soluble Aβ. Thus, we injected EDA and P75ECD as a combination to treat AMY mice (AD model animal), we expect to see this combination can alleviates Alzheimer's disease-type pathologies and cognitive deficits.

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The *in vivo* triad behind the neuromodulatory effect of *Bauhinia variegata* L.

Alaa Selim, Heba Handoussa and **Nesrine Elsayed**
German University in Cairo, Egypt

LPS is a well established model for induction of neuroinflammation and amyloidogenesis widely used to study the pathway of many neurodegenerative diseases like Alzheimer's disease. Phenolics are widely known for their different beneficial characteristics, they could be considered as promising therapeutic agents against neurodegenerative diseases.

In this study, hydroalcohol extract of leaves and stalks of *Bauhinia variegata* has been shown to ameliorate neurodegenerative diseases owing to the high phenolic content including flavonoids.

The effect of the plant was studied in a dose dependent manner in comparision to herbal (green tea) and non-herbal reference (donepezil HCl) standards and the *in vivo* study was designed in what is promised to be the *in vivo* triad. The peak of the triad was represented by improvement of cognitive performance in *in vivo* behavioural tests (Y maze and water maze). The first side of the triad base was represented by biochemical analysis done on brain homogenates by ELISA where a recognizable decrease in amyloid beta 42 was observed by 39.89%, 59.8%, 71.3% and 78.49% after administration of doses 50, 100, 200 and 400 mg/kg of the studied extract respectively in addition to an increase in SOD levels by 80%, 2.4 folds, 4.5 folds and 5.6 folds after treatment with the same doses respectively.

The second side of the triad base was represented by histopathological investigation which confirmed the previous findings.

According, *Bauhinia variegata* could be considered as a phenolic capsule that can bombard and delay progression of neurodegenerative diseases.

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Luis Angel Francisco Sorroza Lopez
University La Salle Mexico, Mexico

A Pharmacoeconomical approach to Dementia: A review of the current Pharmacological and Non-pharmacological managements – A cost-benefit analysis

Dementia is a growing world health threatening condition declared as priority by WHO; the prevalence of the condition reached 47.5 million people in 2015, affecting mainly population over 65 years old. With an incidence of 7.7 million per year, the prevalence is expected to reach 81.1 million by the year 2040 and over 130 million in 2050, with increasing numbers in population under 50 and 40 years of age. Dementia represents one of the major burdens to health care systems globally ($812,000 million in 2015). The current pharmacological treatments are limited to mitigating the onset and development of the disease and management of the most usual symptoms, which modulate the course of the disease with diverse side effects that range from personal discomfort to sudden death. There is strong evidence from clinical studies that participation in mentally and physically stimulating activities in early stages of the disease (MCI, mild cognitive impairment) is associated with decreased incidence and/or prevalence of dementia. We have researched the database of Pubmed, Cochrane, Medline, Sciencedirect, and EBSCO, to collect evidence of 250 references on the following subjects: pathophysiology, management and the costs of dementia. From the mentioned data we have elaborated a cost-effectiveness and cost-benefit study; the analysis was performed under a Markov model, and the purpose is to compare the pharmacological and non-pharmacological interventions. The results feasibly support that an early diagnosis and onset of non-pharmacological intervention, both cognitive and physical, is the best cost-benefit choice for patients with MCI and dementia.

Biography

Luis Angel Francisco Sorroza Lopez has completed his PhD at the age of 26 years from University Regional del Sureste Oaxaca Mexico Medical School and master studies from La Salle University Mexico Faculty of Chemical Sciences. He has been priced from the current University for wining the category at master level in Health Sciences from the anual research contest of the University.

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Special Session

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Hayley Riley and Louise Evans
Haylo Theatre, United Kingdom

Hayley Riley and Louise Evans: Play on Dementia and Alzheimer's Disease

Biography

We are a two woman theatre company based in the North West (Graduates from the University of Chester and 2015 Venture winners) who write and perform our own theatre, all of which explore life issues. Our first being 'Over the Garden Fence'. This play follows the story of Annabelle and her Gran Dolly, on a nostalgic journey through Grans life, sharing memories of happiness, sorrow and joy. It is a fast paced, uplifting and comical exploration into family, life and relationships that promotes an awareness of dementia that is accessible to all. Our play encourages conversation and engages audiences in the discussion of not only dementia but the importance of the individual behind the diagnosis. Professional's, mental health care services, careers and families, have seen our play as a tool to bring people together and discuss prevalent and complex issues.

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Scientific Tracks & Abstracts

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Impact of physical and mental insults on dementia: Clinical observations following a transcranial-intranasal photobiomodulation therapy study

Anita Saltmarche[1], **Margaret A Naeser, LicA**[2], **Kai Fai Ho**[3], **Michael R Hamblin**[4,5,6] and **Lew Lim ND**[7]
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Observations reported here range from 1 week to 1 year following a randomized, single-blind placebo-controlled pilot study to assess the effect of near infrared transcranial and intranasal photobiomodulation therapy (PBMT) on cognition in 19 participants over 12 weeks with a 4-week no-treatment follow-up. Randomization included 13 into active and 6 into sham treatments. Participants were assessed with MMSE and ADAS-cog scales. Participants with moderate to severe impairment (MMSE baseline of 5-24) who received active treatment showed significant improvements on each test ($p<0.03$) after 12 weeks. They also reported better sleep, fewer angry outbursts, decreased anxiety, and less wandering. Declines were noted during the final 4 weeks without treatments. No related adverse events were reported. After the 16-week study all participants were given active PBMT devices for home treatment. We continued to monitor the participants every 6 to 8 weeks, and observed that those with physical and mental insults suffered negative impact on their cognition, whereas those who did not, retained or continued with improvements. Physical insults included foot ulcer, chronic pain, influenza, major surgery, and pneumonia. Mental insults included grief from a family loss, property fire, work-related and emotional stress. In conclusion, we observed that improvements from PBMT were maintained when those with dementia did not experience physical trauma and mental stress. Although these observations relate to a PBMT study, they suggest that the effects of additional diseases, accidents, and mental/emotional stress factors need to be incorporated into data analysis that could develop into long-term treatment protocols for dementia.

Biography

Anita Saltmarche completed her Masters of Health Sciences from McMaster Univeristy, Hamilton, ON, Canada. She was a geriatric clinical nurse specialists for over a decade at Sunnybrook Health Science in Toronto as well as other leadership positions across the healthcare system. Anita manitains a clinical practice and provides research and other consulting services to a broad group of clients ranging from the Ontario Ministry of Health & Long Term Care to a number of private sector companies and non-profit health organizations. As principal and co-investigator on peer-reviewed research projects, she has published numerous papers in well respected journals.

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Sophia Stavron, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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Stop Dementia in it's Track with Alternative Healing Modalities

Sophia Stavron
StavroHedi LLC, USA

Sophia Stavron, Gerontologist and Energy Healing expert, successfully stopped the progression and reversed her father's Vascular Dementia and Alzheimer's with simple tools that anyone can use. Doctors have been stunned to review the test results over the past 7 years, which show improvement in brain function instead of the typical progression of the disease. Believing all disease stems from blocked energy and stress, Sophia prescribed a solid regimen of mindfulness and stress-management practices and energy healing modalities that produced these stunning results.

In this presentation, Sophia shares the tools and strategies she used, the explicit steps to utilize these strategies, the scientific explanations for why these strategies were successful for her father and how these strategies can prevent the onset of the disease in the first place.

Biography

Sophia Stavron, Gerontologist and Energy Healing expert, successfully stopped the progression and reversed her father's Vascular Dementia and Alzheimer's with simple tools that anyone can use. For twenty-five years, Sophia has combined her passion for helping others with her lifetime of learning to use energy to help others heal their bodies and minds. Her upcoming book shares her story of curing her sister's Stage 2 Hodgkin's Lymphoma with alternative energy healing modalities. Sophia has a Bachelor's degree in Sociology from the University of Nebraska at Omaha and is a candidate for a Master's degree in Gerontology.

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Notes:

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Engaging with lived dementia experience through first-person media narratives

Gary Morris
University of Leeds, UK

Having problems in communicating does not mean that individuals with dementia are unable to express themselves. Instead, we need to find ways to 'listen' more to what is being related. This presentation explores the learning potential of engaging mental health nurses with lived dementia experience through the accessing of media narratives. The narrative accounts are selected from a wide selection of media sources utilizing visual, textual and auditory modes of communication. These include internet blogs/discussion forums, autobiographical texts, art work, poetry, feature films and television documentaries. Subsequent learning was evaluated through focus group discussion and module assignments. The preliminary findings from these learning activities demonstrate a greater appreciation of lived dementia experience, including a person's thoughts and feelings. There was also a sense of attitudinal change reported with students more mindful of the internal world of those with dementia. This importantly helped participants to reframe behaviours which otherwise could be perceived as "challenging", recognizing internal drivers such as frustration, pain or helplessness. The work illustrated here highlights the need to facilitate expression of lived experience amongst those with dementia and for health care workers/learners to explore means of tuning in to and 'hearing' their narratives. The result of this is the promotion of attitudinal change, empathic learning and person centred care approaches as advocated by notable researchers such as Tom Kitwood and the Bradford Dementia Group. This also reflects care approaches to care highlighted in the National Dementia Strategy (DOH 2009).

Biography

Gary Morris is a PhD student at the University of Huddersfield as well as being a mental health lecturer working at the University of Leeds. He leads the mental health nursing programme and runs modules which include "Lived experience in mental health" and "Media depictions of mental health." He is the author of a number of articles and textbooks concerned with dementia care, media narratives and lived mental health experience.

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Janice Hoffman, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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Trends of successful exelon (*Rivastigmine*) patch in geriatric patients with Dementia

Janice Hoffman
Western University of Health Sciences, USA

Skin reactions are one reason for termination of rivastigmine patch. The study goal was to identify factors associated with skin reactions from rivastigmine patch in older adults. A retrospective chart review with prospective skin assessment observational study was performed on all outpatients with Alzheimer's dementia at a specialized ambulatory geriatric evaluation clinic.

Demographic, clinical, and outcome variables were compared between the two groups (i.e., those with versus without skin reactions) using $\chi 2$ or Fisher's exact test for cross-tabulations of nominal variables and independent samples and Student t-test, for continuous variables. Statistical differences between groups were considered significant when p-values were ≤ 0.05.

A total of 33 patients were included with 24.2% males, 75.8% females and a mean age of 83 years. Race included Caucasian (90.9%) and Hispanic (9.09%). Patients lived at home with a spouse (39.39%), home with caregiver (24.24%) or in an assisted-living facility (6.06%).

A statistically significant finding was MMSE score of 17 ($p<0.01$) and a skin reaction. Comorbidities included, 15.2% had diabetes and 66.7% had hypertension. On average sodium plus potassium values were 139 mEq/L and 4 mEq/L respectively. Bathing was on average 3 baths weekly. Concomitant medications included: memantine (39.4%), antidepressant (51.5%), antipsychotic (12.1%) with 24.2% not taking any medications.

Two statistically significant skin reactions seen were erythema where the patch was applied and pruritis ($p<0.01$). There were no significant skin reactions resulting in rivastigmine patch discontinuation.

This small cohort showed one statistically significant trend: the lower MMSE score the increase risk of a skin reaction.

Biography

Hoffman has completed her Pharm.D. from the University of Southern California, School of Pharmacy in Los Angeles, CA, USA and postdoctoral studies from University of Maryland at Baltimore Mental Health System. She is the director of PGY-1 pharmacy residency in Geriatrics at the los Angeles Jewish Home for the Aginig, and an Associate Professor at Western University of Health Sciences where she is the expert in nuerology. She has published more than 25 papers in reputed journals and has been serving as an Associate Editor of the *California Pharmacist* Journal.

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The relationship between the number of Chronic Diseases and Living Environment among Dementia patients

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Aim: To understand the Relationship Between the Number of Chronic Diseases and Living Environment Among Dementia Patients.

Methods: The study use the Aged Care Service Demand Questionnaire to obtain the subjects' information on activities of daily living, physical health, mental health, and social resources and economic conditions et al.. The current research use Chi-square independence testfor analysis.

Results: In the current study, 64.95%of the dementia patients suffer from at least one chronic disease, but for those who live at home, only 14.54%of the dementia patients suffer from one and more chronic diseases. There are statistically difference between living at home and institutions in terms of the number of chronic diseases ($P<0.0001$).

Conclusion: There are closely relationship between chronic diseases and living environment, the public should realize the dementia patients could combine many chronic diseases at the same time due to their living environment.

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The National Dementia strategy: Making it culturally competent for all

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We welcomed the National Service Framework with great enthusiasm as response to improving the less than optimal quality of services experienced by older people and a step in the right direction for increasing the capacity of services. Furthermore, it represented a significant consideration by the government to embrace compassionate care in the NHS in the face of the numbers growing older less healthy. It is now time to move the goal post given the need to be more responsive to the diverse multicultural demographics of the UK and the significant numbers of those living with dementia.

Health commissioners and professionals are finally recognizing now more than ever the importance and timely need to reconfigure older people services away from services previously and suitably set in mono-cultural population settings. This is about providing culturally competent services/care (globalised care) that fits and underpins the challenge to ensure that the Human Rights of all citizens to equal access to good health care is met as enshrined in legislation. Cultural competence is the vehicle that can ensure the commissioning and delivery of health and social care services is done in a manner that meets the complete complement of assessed needs of a locality based on its demographics and those of the individual based on their specific cultural background. This is not about race. It is about ensuring that those affected by Alzheimer's and dementia have access to care which they or their carers agree will help them maintain 'self'.

The question to answer is how do we make the National Dementia Strategy and the Older Peoples Service Framework culturally competent enough to ensure that not only are the inconsistencies in services addressed but those who are affected by these diseases live well, are supported well and die well no matter what their cultural affiliations are?.

Biography

Tiwalola Kolapo has completed a Master's degree in Social Policy in Social Policy from the Middlesex University and worked as a commissioner of health services for the NHS for over 15years. She is currently studying for a doctorate in mental health at Middlesex University looking at the challenges and opportunities for commissioning culturally competent Dementia services.

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Notes:

Jacki Stansfeld, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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Systematic review of positive psychology outcome measures for family carers of people with dementia

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Introduction: The importance of positive psychology in understanding the wellbeing and experiences of family carers of people with dementia is increasingly being recognised. Despite this, outcome measures used in research with family carers of those with dementia are often centered on concepts such as burden and depression. There is a scarcity of positive psychology measures developed for or validated in this population

Aim: By employing standardised criteria, this review aimed to assess the quality of positive psychology measures developed for or already in use with family carers of people with dementia and to determine their potential utility in future interventional studies.

Methods: We performed a systematic review of positive psychology measures for family carers of people with dementia. The databases searched were PsychINFO, CINHAL, MEDLINE, EMBASE and PubMed. Two reviewers independently assessed full-texts for inclusion and performed a quality assessment of each of the scale development studies identified to examine the psychometric properties reported.

Results: This review identified 10 positive psychology outcome measures (and 6 validation papers of these scales) within the constructs of self-efficacy, spirituality, resilience, gain, and meaning.

Conclusion: Several outcome measures were identified that may have potential utility for future interventional studies, but it is clear that there is still work to be done to develop and refine more positive psychology measures for this population. A lack of reporting of the psychometric properties by development authors limited the conclusions that could be drawn. It is recommended that authors aim to report this in the future.

Biography

Jacki Stansfeld is currently completing her PhD at University College London in the Division of Psychiatry. She works as a Research Assistant on the Valuing Active Life in Dementia (VALID) research programme.

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The development of an online information and support program for informal carers of people living with YOD: The Rhapsody study

Bridget Jones
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RHAPSODY (Research to Assess Policies and Strategies for Dementia in the Young) is an EU Joint Programme - Neurodegenerative Disease Research (JPND) initiative that aims to improve information and support for families living with young onset dementia (YOD). Defined by symptom presentation before the age of 65 years, YOD is relatively rare and associated with diagnosis difficulties. Extensive family impact includes carer burden and stress, relationship disruptions and financial decline, all of which are exacerbated by a lack of age-appropriate services, support and information. This multi-disciplinary collaboration across six European countries developed an internet-based e-learning program for families living with YOD. Information and policies related to YOD were analysed from on-line reviews completed in all countries. Carer perspectives on needs and experiences were explored using in-depth interviews in the Netherlands, followed by focus groups in England, France, Germany, Portugal and Sweden. An intervention based on an on-line support program was considered appropriate due to relatively low prevalence of YOD, georgraphical spread and mobility restrictions resulting from the condition. Findings from early research stages informed the design and content of the 7-Part program, which explained clinical background, psychosocial perspectives, family issues, legal aspects and the importance of carer support. Produced in English, German and French, the intervention was tested by volunteer family carers in England, Germany and France.

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Talking with Dementia: The patterns and characteristics of a unique communication

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This paper discusses the unique characteristics of communication with people with dementia. While most of the literature on dementia identifies it as a non-communicative state, and focuses on the clinical aspects of dementia and the resulting communication deficiencies, this current paper approaches the communication with people with dementia as a mutual "eye to eye", meaningful and fruitful communication, both for the person with dementia as well as for the "healthy" partner to the conversation. On the basis of the analysis of concrete situations and conversations I held with a relative who was hospitalized at an institution for people with dementia, I point at four patterns of this unique communication: 1. A mutual attempt to understand the experience of dementia; 2. The search for sequence and its absence; 3. Sliding between reality and illusion; 4. Creating mutual space in/against the institutional space. The discussion of these communication patterns has the potential of offering some tools to people that are coping with the challenge of maintaining the relationship with their relatives who were diagnosed with dementia.

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Notes:

Ahmed M Lutfi Al-Imam, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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A case report of delirium superimposed on dementia, in an elderly female patient with venous thrombosis of the leg

Ahmed M Lutfi Al-Imam
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This is a challenging case of an elderly female patient, 86 years old, that has been diagnosed with delirium superimposed on depression (DSD). This frustrated patient developed DSD in parallel with venous thrombosis (VT) of her right leg. Venous thrombosis was initially superficial, affecting the Great Saphenous Vein (GSV), that later progressed into Deep Venous Thrombosis (DVT), which was confirmed by radiology (Doppler study) and laboratory investigations (D-dimer level assessment).

The therapeutic approach for such patient, was literally a dilemma, and the situation was distressing to the patient, medical and paramedical staff, and the caregivers. The patient had stopped accepting food, and she had a refractory insomnia. Additionally, the patient became frequently hyperactive throughout the day in association with frequent delirium attacks. Her hyperactivity was difficult to control, despite her leg condition (DVT), that requires immobilization to prevent a superimposed catastrophic thromboembolic episode(s). Luckily, a pulmonary embolism did not happen.

The patient refused/resisted diagnostic and therapeutic interventions, and third party consultations. However, a multidisciplinary approach was mandatory, and the core issue was the DSD. Eventually, the DSD was eventually successfully corrected with an adjusted dose of Haloperidol, a high potency first generation antipsychotic. After few days on Haloperidol, the patient became cooperative with caregivers, acceptant to therapeutic interventions, and hospitalization. Her medical and surgical complications were successfully managed. Finally, the patient was scheduled later, for reconstructive surgery, using mesh skin grafting under regional anesthesia, to cure her subsequent refractory venous leg ulcer.

Biography

Ahmed Al-Imam, is a 32-years old medical doctor and a Dermatologist from Iraq. He finished his MSc (Dermatology) in the UK. Currently, he works as a lecturer at the faculty of Medicine, University of Baghdad. He has teaching experience in the fields of Human Anatomy, Surgical Pathology, and tissue processing. His research interests include Novel Psychoactive Substances, skin and hair disorders, and biomedical applications. His doctorate thesis (PhD in Medicine) at the University of Hertfordshire, will deploy comprehensive mapping of the Dark Web, in relation to the Performance and Image Enhancing Drugs (PIEDs). His latest invention patency, was on Intermittent Pneumatic Compression (IPC) devices, for management of bed-ridden and elderly patients, with chronic venous insufficiency.

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Kwan Ching Yin, Connie, J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
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Decision on mode of feeding in advanced dementia: Experience of caregivers in the discussion with medical profession

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Dysphagia and behavioural feeding problem has long been a prevalent issue in advanced stage of dementia (Easterling & Robbins, 2008). Instead of prescribing tube-feeding to tackle the impairment (Carmel, 1999), comfort feeding (or namely careful hand feeding) is an alternative to the dementia patient and caregivers in view of its comparable mortality rate to tube feeding (Sanders et al., 2000) and the patient's quality of life (Sampson, Candy, & Jones, 2009). Therefore, it has always been a struggle for medical profession, as predictably as the patient's caregiver, to choose between an adequate and safe nutritive support and quality end-of-life care on feeding. In this study, caregivers of advanced dementia patients of four different feeding and swallowing scenario were interviewed about their choice of feeding. The four scenarios include family choosing: (1) comfort feeding for patient diagnosed with severe dysphagia despite aspiration risk; (2) tube-feeding for patients with severe dysphagia; (3) comfort feeding for patient with feeding problem despite malnutrition; and (4) tube-feeding due to poor oral intake of the patient.

Narrative analysis (Labov & Waletzky, 1997) was used for analyzing the four interviews about caregiver's experience during discussion with medical profession on mode of feeding. The study then compares and contrasts the four narratives. Implications for stakeholers in relating and working with families and patients are explored, suggesting a framework for a family-centered decision making model on mode of feeding issue for families with patients of advanced dementia. Also, by self-reflexivity of the author (Burck, 2005), the importance of listening and acknowledging each family are important to identify family's strength and resilience.

Biography

Connie has completed her BSc in Speech and Hearing Sciences from the University of Hong Kong and MA in Family Counseling and Family Education from the Chinese University of Hong Kong. She works as speech therapist in Hospital Authority in Hong Kong, involving in a variety of projects for rehabilitation and care for the aged population. She had been the committee members of the Hong Kong Association of Speech Therapists since 2012. She has published journals regarding stroke rehabilitation services.

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Laura Templeton
University College London, UK

"Play is the Highest form of research". How Einstein's quote inspired me!

In collaboration with Gill Livingston, Professor of Psychiatry of Older People, Division of Psychiatry in the Faculty of Brain Sciences, I designed new instrument to elicit interests and plan activities for people with dementia in care homes. Boredom and agitation are major problems, so managing these would improve the life of both patient and carer. This tool takes the format of a board game as a way of being non-threatening and fun to use. Trials with different designs were carried out over a number of years, culminating in a pilot study to test the feasibility and acceptability in a number of London care homes. This has now been manufactured and available to buy. It is part of the MARQUE Project at UCL, a staff training program in care homes. We hope that knowing the residents better will help prevent agitated behaviour and help staff know what to do when already agitated. It also helps make care more enjoyable by introducing more pleasant events into daily life.

Biography

Laura Templeton has a BA (hons) Fine Art from Bristol and has worked in Healthcare Design for over twenty years. She has designed a number of games as teaching aids and realised how easy it is for people to relax and talk openly, when playing a game. She collaborated with a team at UCL over a number of years to ensure her designs had medical and scientific validity. Having seen the success of Call to mind… she is now working on other versions.

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