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Plenaries

P01

The Great Debate: have we succeeded in innovation and diffusion in mental health care for the elderly?

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In this debate, leaders in the field of psychogeriatric care will dispute if innovation in psychogeriatrics has really succeeded to integrate the biopsychosocial model into daily practice and clinical research. As a case for discussion, the 'Case Dementia' will be one of the topics. Despite major advance in the diagnosis, nosology and management of the dementias, the neglect of dementia care by the healthcare system remains an important challenge which must be confronted now. For example, in public health, dementia still does not figure in official WHO/OECD listings of chronic disease. In hospitals and nursing homes, prevention, detection and management of delirium and dementia in hospitals and nursing homes remains alarmingly poor. Throughout health care, skilling of primary care workers in dementia care remains the exception rather than the rule.
The pressing need for specialists working in the field of mental health and aging now is to apply the same science, energy and enthusiasm into diffusion and implementation that they have displayed within their discipline.
They need to learn the critical success factors crucial to implementation and diffusion, and develop lines of argument that emphasize the worth of scientifically-informed dementia care in both personal and societal terms which resonate with policy makers, and the general public.
Establishing the worth and advancing the science of psychosocial interventions and interdisciplinary care is perhaps the major challenge to the disciplines. An example can be found in how timely publication of the meta-analysis of the major benefit of stroke unit care has galvanized the further development of stroke care. In addition, the re-assertion and restatement of personhood and quality of life with dementia is likely to be a critical success factor, especially as it makes its way into how the success of dementia care is measured.
Prof Ken Rockwood will introduce and moderate the debate after a concise lecture of prof Desmond O'Neill presenting arguments for the discussion. The members of the panel, prof Marcel Olde Rikkert, prof Edmund Chiu and prof Jacobo Mintzer will take standpoints in the discussion. Last but not least, information about the most important innovations of the last years from the poll of the congress delegates will be discussed with the audience.

P02.01

Future of clinical trials

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Background: Research into Alzheimer's disease (AD) has been at least partly successful in terms of developing symptomatic treatments, but it has also had several failures in terms of developing disease-modifying therapies and preventive measures. These failures have raised a debate on potential theoretical and methodological pitfalls including AD pathogenesis and diagnosis, choice of therapeutic targets, and clinical trials design.

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Objective: This is a review of experiences and challenges in randomized controlled trials (RCT) for cognitive impairment and AD and future directions in the field.

Results: Previous prevention and treatment trials indicate several important points: Timing; stating earlier may lead to better effects, Target population; too healthy, young and heterogneious population require large sample sizes and too long follow-up times, Outcome measures: cognitive impairment may be better measure than traditional conversion to dementia. Also ethical issues need to be considered. AD has a multifactorial etiology and there may be several phenotypes with different treatment options. Many promising RCTs are ongoing, but we need to acknowledge that a single cure for AD is unlikely to be found and that the approach to drug development needs to be reconsidered. Preclinical research is constantly providing us with new information on pieces of the complex AD puzzle, and an analysis of this information might reveal patterns of pharmacological interactions instead of single potential drug targets.

Conclusions: Multifactorial etiology of AD points the importance of multi-domain interventions to effectively delay dementia onset. Increased collaboration between basic and clinical researchers and pharmaceutical companies can bring us closer to developing an optimum pharmaceutical approach for the treatment of AD.

P02.02

Future of dementia: Biomarkers and diagnosis

Masatoshi Takeda *Osaka University Graduate School of Medicine, Suita, Osaka, Japan*

Earlier diagnosis of Alzheimer's disease is essential to implement effective intervention to Alzheimer's disease. Since biochemical changes such as amyloid deposition and neurofibrillary tangle formation are observed decades before the onset of clinical symptoms of dementia, biomarkers can be used to give early diagnosis before the deterioration of cognitive function. Amyloid beta 42 is generated by consecutive cleavage at beta-site and gamma-site of amyloid precursor protein (APP), and deposited in the core of senile plaques and the cerebral blood vessels of angiopathy. Presenilin complex (presenilin, nicastrin, APH-1, PEN-3) is responsible for gamma-cutting of the substrate molecules including APP, APLP1, APLP2, Notch, CD43/44, Cadherins, ErbB4, and many other molecules. This unique intra-membranous protease activity may be regulated by CD147, Rer1, CRB2, p24alpa2 and other molecules in similar or somewhat different ways according to the substrate molecule. The biomarkers reflecting the pathological modulation of gamma-secretase (presenilin) can be a surrogate marker of Alzheimer's disease. Cognitive function of the elderly is modulated by genetic and environmental factors. Genes related with cognitive function include tau, apolipoprotein E, serotonin transporter, dopamine receptor D2, BDNF (brain-derived neurotrophic factor). Environmental factors possibly related with elderly cognitive function include education, physical exercise, sleep, life style and many others. Clinical diagnosis of Alzheimer's disease should integrate all these factors, which will guide clinicians to adequately target the individual early enough to implement pharmacological as well as non-pharmacological intervention.

P02.03

New diagnostic criteria for dementia

John O'Brien *Newcastle University, Newcastle Upon Tyne, United Kingdom*

Current sets of clinical diagnostic criteria for dementia were developed in the 1980s and 1990s and based on research over the decades before this. The best established criteria for Alzheimer's disease, the McKhann criteria, contain no particular positive clinical or biological markers for Alzheimer's disease but are mainly criteria of exclusion. It should not be forgotten that they have served the field incredibly well over several decades, allowing important advances in understanding natural history and in therapeutics. However, descriptions of new dementia syndromes, particularly types of fronto temporal dementia, Lewy body dementia and different subtypes of vascular dementia, have necessitated revisiting the boundaries between all these disorders. Arguably, vascular dementia criteria in the 1990s were the first to incorporate a biomarker, that of the presence of cerebrovascular disease on imaging, as a requirement for diagnosis. This trend had continued over the decade so that revised consensus criteria for dementia with Lewy bodies in 2005 also incorporated an imaging marker, that of dopaminergic change in the basal ganglia, as a criteria for diagnosis. The advent of CSF and new imaging markers for Alzheimer's disease has heralded another paradigm shift with regard to diagnosis. Although there remain some problems with inter-centre variability and normative values, as well as how CSF should be collected and processed, it is now established that raised levels

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of tau and phospho-tau and decreased levels of beta amyloid in the CSF are associated with both the diagnosis of Alzheimer's disease and Alzheimer pathology in the brain. There may be reductions in alpha synuclein in Lewy body dementias. Amyloid imaging has also had a major impact on the field, with demonstration of raised amyloid not only in those with Alzheimer's disease and Mild Cognitive Impairment, but also in a significant proportion of apparently normal healthy older people. Imaging markers for the diagnosis of Alzheimer's disease, such as medial temporal atrophy on structural imaging and tempero-parietal hypoperfusion and hypometabolism on SPECT and PET imaging, and more recently amyloid imaging, have increasingly been validated by clinical and pathological study. As a result, CSF and imaging markers have been suggested as ready for incorporation in new revisions of criteria for Alzheimer's disease, for example the Dubois et al criteria I(2007) for the early diagnosis of Alzheimer's disease, the intention being not only to improve accuracy of diagnosis but allow earlier diagnosis, at a "pre dementia" stage. Other important suggestions for changes to diagnostic criteria include the use of major and minor neurocognitive disorder in DSM-V instead of dementia and revisions of the NINCDS criteria for Alzheimer's disease, maintaining the focus on Alzheimer dementia but now incorporating positive clinical or biomarker changes suggestive of Alzheimer's disease. It has been proposed, largely based on the presence or absence of biomarkers, that there should be separate criteria for mild cognitive impairment due to Alzheimer's disease and even preclinical Alzheimer's disease, where biomarkers are positive but people have no symptoms. These sets of criteria, while appropriate for research use, are not yet ready for clinical use. They not only require further validation but also raise a series of important research and ethical questions regarding how and when they should be applied, as well as the costs and benefits of using them. Ultimately, the development and utility of such criteria will depend on accompanying progress in the availability of effective treatments that can be given earlier in the disease process.

P03.01

What is technology in dementia care?

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The term "dementia" is used to describe the symptoms of a range of diseases. These symptoms can be made worse by environmental issues. The more "dementia friendly" the environment is, the milder the symptoms will be. Although the underlying disease is progressive and irreversible, the environment can either usher the person towards a state of increased dependence or maintain their well being for longer. One might say for example that even if the Alzheimer's disease is progressing at the usual rate, the "dementia" is progressing at a slower rate. People with dementia fear dependence and value independence. Keeping people independent for longer is potentially much less expensive. So for financial as well as emotional reasons, keeping dementia symptoms at bay is important. Those symptoms include not being able to remember, or to work things out. The person may have the normal changes of aging but a reduced capacity to adapt to them. They will also have behaviours that are unhelpful, but which are caused by the stress that naturally arises from these circumstances. "Technology in dementia care" is a term that can be used to describe a range of machines, equipment and systems that can be applied to improve the circumstances of the person with dementia and to solve some of the problems caused by these symptoms. The Telecare and Dementia programme of the Joint Improvement Team of the Scottish Government is providing advice for health and social care workers in "the provision of equipment within and out with the home to monitor changing needs and risks and to provide alerts and information that enable improved and informed responses to those needs and risks." This programme uses an informal classification of telecare. The first level refers to equipment that forms part of community alarm services, such as user activated alarm calls to a control centre. The second level includes sensors that can monitor the home environment, and aspects of lifestyle, physiological measures and vital signs. The lifestyle measures include information such as when doors are opened, whether water taps are running, and the use of electrical or other appliances. Through passive infrared sensors, movement of the person can be detected and monitored with a view to managing risk, and improving quality of life. This level can provide data about the person's life style, movements and routines, which can be used for assessment of their level of need. The third level has arisen with the development of improved and increased availability of broadband, wireless, and audio-visual technology. It offers the possibility of consultations between the user and the health care professional, reducing the need for home visits or hospital appointments. It also provides for people to "visit" libraries and shops, and to maintain visual contact with families. There has been a

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tendency to regard Assistive Technology as being the expensive or complex equipment that needs to be retrofitted or installed in the construction of a building. At the Dementia Services Development Centre of the University of Stirling where we work to improve services for people with dementia and their carers through research, teaching, and provision of information, we have a broad view of technology which includes simple inventions such as a sink plug which allows water to drain away to prevent floods, or the use of contrasting paint, or increased levels of light to make things easier for the person to remember or work out what they are doing. In this presentation there will be a discussion of these forms of simple, or complex technology, and how they can prove practical and useful in care for people with dementia.

P03.02

Caring for architecture

Peter Swinnen *The Flemish Government Architect's Team, Brussels, Belgium*

"By 2050, there will be, in Belgium, two million more people over the age of sixty than there were in 2010. The number of over-eighties will treble. Assuming there is no change in policy, this implies 180.000 additional care places, staffed by 120.000 additional personnel.∗" Impressive statistics lay ahead in the healthcare sector. The Flemish Government reacts with equally impressive ambitions. The policy document 'Flanders in Action' states that Flanders needs to gain a position among the top five European regions by 2020. In terms of care, Flanders does not only want to respond to the social needs and anticipate on the socio-demographic developments, it also aims for an accessible and affordable supply that is especially efficient, effective and high-standard. The health sector in Flanders is today at the dawn of an important investment program that will have a profound impact on the development of the regional and urban environment. This implies a correct translation of this critical mass, this social urgency into an ambitious policy and a swift and thorough implementation on the field. The Vlaams Bouwmeester Team sees this urgency as an opportunity. The sheer mass of this future need in healthcare and the limited time in which this need has to be fulfilled, can make the ideal conditions for a real turning over in the policy and spatial framework of this sector. The ideal conditions to rethink traditional typologies and to develop a healthcare model for the future, through the momentum of architecture. For thinking about community, about cultural and social aspirations is essentially what architecture is about. Architecture is about conveying a vision of what a society wants and needs to be. Today, impressive figures call for urgent measures and an adequate response. But this response needs to go beyond the urgency of the moment. It has to anticipate on the urgencies that lay ahead. For example, the disruption of the age pyramid in Flanders, that is at its broadest at the 40 to 45 age group, predicts a peak in elderly care in twenty years. But in time this 'bubble' will dilute, and new disruptions will appear. An adequate architecture for healthcare has to deal with this peak of 2030, but on the long term also has to deal with future disruptions and phenomena. The real objective of architecture in the healthcare sector lies beyond the first peak. Therefore, the question is how one deals with growth and shrinkage, with new ways of living and caring. It is a question that surpasses the limits of the current healthcare infrastructure and ventures into the broader field of architecture and society. For the specificity of healthcare architecture, which is often used as its key asset, can also be seen as its greatest constraint. In a quest for innovation this sector has to surpass its own characteristics and traditions. For the real question is: is healthcare architecture really a specific kind of architecture?

P03.03

Development of human care robots for aging society

Zhiwei Luo *Kobe University, Kobe, Japan*

In order to activate the aging society, innovation of health industry is necessary. Our research aims to construct the solid scientific foundation as well as advanced technologies for innovating health engineering. We mainly target on following applications with respect to the human's health levels: (1) Welfare support of healthy elderly people so as they communicate and contribute to the societies more easily and safely with happiness, (2) Evidence based training and health promotion, (3) Disease prediction and prevention using bio-sensing, (4) Human care support robots, and (5) Rehabilitation of human motor functions and high order cognitive functions by developing novel sensing and information technologies, virtual reality and robotics. We analyze and evaluate how human's motor functions, such body balance, walking, running and brain cognitive functions change with the increase of age by using advanced measurement

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and computer simulation technologies, such as biofeedback, NIRS and immersion-type interactive dynamic simulation. One example of our research that will be introduced in the talk is the development of a human care robot RI-MAN.

P04.01

Depression and cognitive decline: Etiologic links in the Singapore Longitudinal Aging Studies

Tze Pin Ng *Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore*

Late life depression is frequently associated with cognitive impairment and decline. However, this relationship is found to vary across studies and population groups, and its temporality and directionality are still unclear. There is substantial evidence to support concomitantly the alternative hypotheses that prior depression is a predisposing risk factor for dementia as well as being a prodromal clinical manifestation of dementia. A current synthesis of evidence suggests that the link between late-life depression to persistent cognitive impairment, cognitive decline and dementia may be mediated by the predominant or particular mix of multiple independent or common pathophysiological pathways acting additively or synergistically, that include glucocorticoid-induced hippocampal atrophy, and AD (amyloid and tau) neuropathology, vascular disease and chronic neuroinflammation. This presentation integrates findings from the Singapore Longitudinal Ageing Studies (SLAS) that contribute to elucidating the various pathways linking late-life depression to cognitive decline and dementia. A number of findings suggest a common primary neurodegenerative and/or primary microvascular pathology for the depression-dementia link that also showed variations by gender and APOE-e4 genotype. There was a greater rate of cognitive decline and incident cognitive impairment (OR = 2.29) in participants with depressive symptoms, which was marked only in men (OR = 4.75), not women (OR = 1.29). Co-morbid vascular disease was higher in men, although an underlying cerebral vascular pathology was possibly not a mediating factor but might amplify the cognitive decline process. Depressed participants also showed more cognitive decline than their non-depressed counterparts (OR = 2.89) if they were APOE-ε4 carriers. Low blood pressure was found to be associated with depressive symptoms, particularly for low systolic BP among treated hypertensive participants (OR = 2.13), and low diastolic BP among untreated or non-hypertensive participants (OR = 2.42). In the same cohort, orthostatic hypotension (OH) increased the odds of cognitive impairment particularly among hypotensive individuals (OR 4.1). Neurocardiovascular instability is likely a result of primary microvascular pathology of the brain and could impair cerebral perfusion to cause cognitive impairment and aggravate dementia, since increasing evidence suggest that OH is a risk factor for subcortical white matter hyperintensities and dementia. Another neurobiological substrate mediating the depression-dementia association is impaired one-carbon metabolism from low folate and vitamin B12 and high homocysteine, which are linked to impaired monoamine neurotransmitter synthesis through the bipterin pathway, and methylation of biogenic amines in the brain through S-adenosylmethionine (SAM). Mounting clinical and epidemiological evidence support the association of low folate and B12 with depression and cognitive impairment and dementia. The SLAS findings showed that decreasing and low levels of serum folate and deficiency levels of B12 were independently associated with increased risks of depressive symptoms. At the same time, lower folate level was associated with poorer performance of episodic memory and language while high homocysteine was associated with deficits in constructional ability and processing speed. Vitamin B-12 was positively related to global cognition, particularly attention and working memory and verbal learning and memory, in APOE e4 carriers but not APOE e4 noncarriers. A multifactorial model of the link between depression and dementia should provide the basis for further understanding and research into new approaches and targets for prevention and treatment of these related psychogeriatric syndromes. Accordingly, various interventions such as physical and mental activities, omega-3 PUFA, folate, B12, tea and others may be tested with the expectation of benefits for both depression and dementia.

P04.02

Depression and cognitive decline: Two of a kind?

Aartjan Beekman *Valeruis Clinic, Amsterdam, The Netherlands*

Depression and cognitive decline figure prominently among the giants of geriatric medicine. Patients with both depressive symptoms and evidence of cognitive decline are many and there is

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a huge research literature exploring the relationship between the two. The first aim of this presentation is to see where we are in understanding the interplay between depression and cognitive decline. Despite the flourishing scientific interest in this area, it appears that there remain many unanswered questions. In this presentation, depression will be taken as starting point, exploring the significance of co-occurring cognitive deficits. Cognitive decline in a depressed patient may be seen as (1) a separate disorder, (ii) a consequence of depression, (iii) part of the depressive syndrome, (iv) a dimension of symptoms denoting a specific depression subtype or (v) combinations of the above. For both research and clinical practice, disentangling depression and cognitive decline is very important. Using data from the literature and recent results from the Longitudinal Aging Study Amsterdam (LASA), the above will be explored. There seems to be good evidence to support the idea that, in many patients, depression and cognitive decline are two of a kind. Shared etiologic and prognostic factors can explain why depression and cognitive decline co-occur and knowledge about their shared etionogic factors may provide leads towards more effective prevention and treatment.

P04.03

Pathways from depression to MCI and dementia: Results of the MTLD III Trial

Charles Reynolds III *University of Pittsburgh, Pittsburgh, Pennsylvania, United States*

Cognitive impairment in late-life depression is a core feature of the illness but has generally been neglected in randomized clinical trials. Approximately half of older patients with major depressive episodes also qualify for a diagnosis of Mild Cognitive Impairment, and such patients are at risk for showing progression to dementia (Alzheimer's, vascular, Lewy Body, frontotemporal, or other). The risk for dementia in older adults with depression may be mediated through the effects of hypercortisolemia on brain structures such as hippocampus and/or through cerebrovascular disease and inflammation. In the MTLD III trial ("Maintenance Treatment of Depression in Old Age," a randomized double-blind, placebo-controlled trial), we tested whether donepezil and antidepressant pharmacotherapy is superior to placebo and antidepressant therapy in improving cognitive performance and instrumental activities of daily living and in reducing recurrences of depression over 2 years of maintenance treatment. 135 participants aged 65 and older were enrolled. We observed: (1) donepezil and antidepressant pharmacotherapy temporarily improved global cognition (treatment x time interaction, $p = .03$), but effect sizes were small (Cohen $d = 0.27$, group difference at one year). (2) A marginal benefit to cognitive IADL was also observed ($p = .06$). (3) Post-hoc subgroup analyses showed that of 57 participants with MCI, 3/30 receiving donepezil and 9/27 receiving placebo had a conversion to dementia over two years, mostly of the AD type (Fisher exact $p = .05$). (4) The donepezil group was more likely to experience recurrence of major depression: 35% versus 19%, $p = .05$. (5) The subgroup with normal cognition ($n = 73$) showed no benefit with donepezil and no increase in recurrence of major depression. Whether a cholinesterase inhibitor should be used as augmentation in the maintenance treatment of late-life depression depends on a careful weighing of risks and benefits in those with Mild Cognitive Impairment. In cognitively intact patients, donepezil appears to have no clear benefit for preventing progression to MCI or dementia or for preventing/exacerbating recurrence of depression. References: Reynolds CF, Butters M, et al. Archives of General Psychiatry 2011; 68 (1): 51–60.

P05.01

Frailty and the risk of late life dementia

Kenneth Rockwood *Dalhousie University/Faculty of Medicine, Halifax, Nova Scotia, Canada*

As people age, their chance of having an adverse health outcome increases. The extent to which this risk increases is not the same for everyone, and the variability in the risk is known as frailty. At any age, compared with those who are frail, fit people have a lower risk of several outcomes, such as death, institutionalization, hospital use and worse general health. In the last few years, it has become clear that the adverse health outcomes to which frail older adults are at increased risk includes late cognitive impairment and the dementias, specifically. How this risk arises is not clear. Some definitions of frailty include factors such as reduced physical activity, weight loss and exhaustion which fit within known risk factor profiles. More recent work re-analysing risk factor data from the Canadian Study of Health and Aging shows that the increased chance of becoming demented in relation to frailty exists, no matter how frailty is defined. Indeed, a recent analysis shows that a definition of frailty which excludes all known dementia risk factors

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(and includes deficits as diverse as skin rash to bowel complaints) still results in an increased risk. Indeed, when these health deficits are combined in a single frailty index variable, they become not just a more powerful predictor than age alone, but carry greater risk than well established factors such as hypertension and head injury. This new perspective is challenging and open to many interpretations, some of which emphasize suspect methodology, such as ascertainment bias or only a 10-year follow-up. Another interpretation revisits the idea of dementia as accelerated aging. This presentation will review such hypotheses, but argue for an interpretation of dementia, especially late-life Alzheimer's disease, as an aberrant repair process, which might not solely include the brain. Such an hypothesis would be consistent with the large diversity of demonstrated risk factors, show why vascular risk factors have been so strong, and be compatible with the step increase in dementia risk associated with chronological age.

PO5.02

The elusive boundary between aging and disease

Tom Kirkwood *Newcastle General Hospital, Newcastle, United Kingdom*

Alzheimer's disease and other dementias cause psychiatric and behavioral symptoms that affect both the person with the illness and family members who are responsible for providing care. There are many reasons to offer psychosocial interventions in addition to, or instead of, pharmacologic interventions. Psychosocial interventions may have equal or greater efficacy than currently available pharmacologic interventions, are unlikely to produce negative side effects and can be more cost-effective, especially in developing countries. Psychosocial interventions that can reduce the negative impact of the disease and enhance the remaining strengths of people with dementia can extend the time they can continue to live at home safely and improve the quality of life of patients and family members. Investigators have been studying psychosocial interventions for caregivers for more than 2 decades. We have learned improving caregivers' knowledge of dementia does not produce improvement in psychological outcomes. In recent years, several counseling and support interventions designed to improve the well-being of family caregivers have demonstrated efficacy. Caregivers who received these interventions experienced outcomes such as reduced burden and depression and improved social support. Other interventions that were designed to modify caregivers' responses to behavior or provide occupational therapy programs that caregivers can use with their relatives at home have demonstrated reduction of behavioral symptoms in people with dementia and in burden for caregivers. The most effective interventions are individualized to the needs of the participants. At this point, interventions involving caregivers either to improve their own well-being or that of their relatives have established an evidence base in randomized clinical trials that is sufficient to justify their implementation in community settings and inclusion in best practice care. Research on interventions directed specifically towards people with dementia is in a more developmental stage. Many interventions that appear to clinicians to be effective in individual cases or small samples have not been rigorously tested. Small nonrandomized studies suggest that psychosocial interventions that aim at improving patients' quality of life may prove valuable. Physical fitness training, activities therapy, nutritional interventions and complementary therapies such as acupuncture and massage may be effective in enhancing strengths and improving many aspects of patient and caregiver well-being, including mood and social support; however, the evidence is mostly anecdotal. New research is beginning to emphasize shared experiences and activities that are suitable to the needs and abilities of the person with dementia and are also enjoyable for the caregiver. The potential value of art and music appreciation, normative, rather than therapeutic activities, could be felt by many more individuals with AD and shared with their friends and family members. These activities, rather than ameliorating problems, can potentially enrich the lives of participants. Aesthetic response does not seem to be highly dependent on explicit memory, the type of memory that is impaired earliest in AD. Sharing a pleasurable experience can sustain and enhance the relationship between people with dementia and their family members. The value of these experiences has generally been based on observation and the intuitive belief that they are worthwhile. Qualitative and quantitative results of the few studies done to date suggest the potential of such programs to improve the lives of people with dementia and their family members. Issues that impede demonstration of the value of these interventions include lack of appropriate measurement tools and insufficient knowledge of how to target the interventions to those who would benefit most. Furthermore, it is often difficult to recruit caregivers and people with dementia for studies of psychosocial interventions. Participants are understandably unwilling to run the risk of being assigned to a no-treatment

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control group. Thus we must specify the potential benefits and identify the best way to measure them, and develop innovative trial designs. Studies should include or be replicated with participants from a wide range of ethnic and socioeconomic backgrounds, to determine their relevancy to people of diverse cultures. Use of the internet for training interventionists and for providing interventions, can lead to international collaboration in efficacy research, and ultimately result in widespread utilization. In this session examples of psychosocial interventions currently available for implementation will be presented. Impediments to widespread utilization and possible solutions will be discussed. Finally, new directions in psychosocial interventions and promising interventions that are beginning to develop an evidence base will be introduced. It is essential to continue to develop and test psychosocial interventions to combat the enormous emotional and financial cost of dementia worldwide, as the search for a way to prevent or cure the disease continues.

P05.03

Successful brain aging: Risk factors in different cultures

João Carlos Barbosa Machado (presented by Cassio Bottino) *Aurus, Minas Gerais, Brazil*

The aging of the population is leading to a rapid increase in the number of older persons with chronic diseases including neuropsychiatric disorders. Cognitive impairment has emerged as one of the most important sources of functional and social disabilities in late life related to large suffering for the individuals and costs for society. By contrast, the striking increase in average life expectancy has favored the search for successful aging. The translation of this concept into practice and the measurement outcome of its practical strategies are challenging considering the influences of a complex unfolding of numerous interactions among biological, psychological, social, cultural and environmental factors. In fact, cognitive health is an essential component of successful aging. However, cognitive impairment-free life expectancies at older ages are not likely. The better knowledge of protective and risk factors is therefore important. Current evidence suggests that preventive strategies may delay the onset or shorten the duration of cognitive morbidity. In the last two decades, new data became available through epidemiological and basic research for the understanding of several modifiable risk factors for dementia such as systolic hypertension in midlife, high body mass index - central obesity, hypercholesterolemia, type 2 diabetes, metabolic syndrome, diet, antioxidants, vitamins, smoking, alcohol, educational level, physical, cognitive, psychosocial and leisure time activities and depression. However, there is considerable interest in whether potentially modifiable risk factors differ between regions. There may be some risk factors that vary more between regions than within regions and that can only be feasibly identified by cross-regional comparisons and transcultural studies. Research has been mainly concentrated in high-income regions of the world, despite the fact that the majority of the world's elderly population lives in low-income regions. The extent of which socio-economic adversities, low educational achievement, cultural differences among other factors may influence brain aging need to be better explored. This presentation will cover the current knowledge on risk factors for dementia and expression of the disease in the oldest old with special emphases on data from longitudinal epidemiological studies from different countries and cultures and also will review the appliance of risk indexes to predict the development of cognitive impairment.

P06.01

Psychosocial interventions for patients and family members of older adults with dementia: What does research tell us, and where should it be going next?

Mary Mittelman *New York University Langone Medical Center, New York, New York, United States*

Alzheimer's disease and other dementias cause psychiatric and behavioral symptoms that affect both the person with the illness and family members who are responsible for providing care. There are many reasons to offer psychosocial interventions in addition to, or instead of, pharmacologic interventions. Psychosocial interventions may have equal or greater efficacy than currently available pharmacologic interventions, are unlikely to produce negative side effects and can be more cost-effective, especially in developing countries. Psychosocial interventions that can reduce the negative impact of the disease and enhance the remaining strengths of people with dementia can extend the time they can continue to live at home safely and improve the quality of life of patients and family members. Investigators have been studying psychosocial interventions for caregivers for more than 2 decades. We have learned improving caregivers' knowledge of dementia does not produce

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improvement in psychological outcomes. In recent years, several counseling and support interventions designed to improve the well-being of family caregivers have demonstrated efficacy. Caregivers who received these interventions experienced outcomes such as reduced burden and depression and improved social support. Other interventions that were designed to modify caregivers' responses to behavior or provide occupational therapy programs that caregivers can use with their relatives at home have demonstrated reduction of behavioral symptoms in people with dementia and in burden for caregivers. The most effective interventions are individualized to the needs of the participants. At this point, interventions involving caregivers either to improve their own well-being or that of their relatives have established an evidence base in randomized clinical trials that is sufficient to justify their implementation in community settings and inclusion in best practice care. Research on interventions directed specifically towards people with dementia is in a more developmental stage. Many interventions that appear to clinicians to be effective in individual cases or small samples have not been rigorously tested. Small nonrandomized studies suggest that psychosocial interventions that aim at improving patients' quality of life may prove valuable. Physical fitness training, activities therapy, nutritional interventions and complementary therapies such as acupuncture and massage may be effective in enhancing strengths and improving many aspects of patient and caregiver well-being, including mood and social support; however, the evidence is mostly anecdotal. New research is beginning to emphasize shared experiences and activities that are suitable to the needs and abilities of the person with dementia and are also enjoyable for the caregiver. The potential value of art and music appreciation, normative, rather than therapeutic activities, could be felt by many more individuals with AD and shared with their friends and family members. These activities, rather than ameliorating problems, can potentially enrich the lives of participants. Aesthetic response does not seem to be highly dependent on explicit memory, the type of memory that is impaired earliest in AD. Sharing a pleasurable experience can sustain and enhance the relationship between people with dementia and their family members. The value of these experiences has generally been based on observation and the intuitive belief that they are worthwhile. Qualitative and quantitative results of the few studies done to date suggest the potential of such programs to improve the lives of people with dementia and their family members. Issues that impede demonstration of the value of these interventions include lack of appropriate measurement tools and insufficient knowledge of how to target the interventions to those who would benefit most. Furthermore, it is often difficult to recruit caregivers and people with dementia for studies of psychosocial interventions. Participants are understandably unwilling to run the risk of being assigned to a no-treatment control group. Thus we must specify the potential benefits and identify the best way to measure them, and develop innovative trial designs. Studies should include or be replicated with participants from a wide range of ethnic and socioeconomic backgrounds, to determine their relevancy to people of diverse cultures. Use of the internet for training interventionists and for providing interventions, can lead to international collaboration in efficacy research, and ultimately result in widespread utilization. In this session examples of psychosocial interventions currently available for implementation will be presented. Impediments to widespread utilization and possible solutions will be discussed. Finally, new directions in psychosocial interventions and promising interventions that are beginning to develop an evidence base will be introduced. It is essential to continue to develop and test psychosocial interventions to combat the enormous emotional and financial cost of dementia worldwide, as the search for a way to prevent or cure the disease continues.

P06.02

Person-centered dementia care in care homes and hospitals: Old hats and new brooms

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One of the main aims of psycho-social interventions is to decrease distress at the level of the individual service user. Much of the distress seen in dementia which manifests as agitation, aggression and depression is the result of poor quality person-centered care particularly in care-homes and acute hospital wards. The term person-centered care is much used but often appears little more than lip-service that does not impact on the lived experience of people with living with dementia. Within this talk the definition of person-centered care is revisited using the VIPS framework that Values people, provides Individualized care processes, considers care from the Perspective of the person living with dementia and that provides the supportive Social-psychological milieu to compensate for the disability of cognitive loss (Brooker, 2007). Person-centered care rests on a value-base that recognizes the personhood of all persons (Kitwood, 1997;

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Brooker, 2004). People are treated as individuals, recognizing that each has a unique history and personality. The perspective of the individual is seen as the starting point for care and that empathy with this perspective has its own therapeutic potential. Care is provided that recognizes that all human life is grounded in relationships and that people, particularly those with living with advanced dementia, need an enriched social environment which both compensates for their impairment and fosters opportunities for personal growth. These ideas are not new but they appear difficult to sustain in practice (Hoe et al., 2006; Alzheimer's Society, 2007, 2009). Tom Kitwood, whose writing shaped these ideas into a coherent theory made this prediction when writing a year before his death: "It is conceivable that most of the advances that have been made in recent years might be obliterated, and that the state of affairs in 2010 might be as bad as it was in 1970, except that it would be varnished by eloquent mission statements, and masked by fine buildings and glossy brochures" (Kitwood, 1997, p133). The quality of caring relationships between staff and people with dementia in care homes and hospitals is a key factor in minimizing distress. How this is achieved is a function of leadership at many levels within the care organization. It is hypothesized that the gap between person-centered rhetoric and care practice is due, in part, to insufficient attention being paid to the organizational aspects of person-centered care delivery. By focusing on the organizational aspects the level of distress for individuals decreases. This in turn can lead to less prescribing of anti-psychotic medication and improved wellbeing. The VIPS framework of person-centered care is provided as a means of helping care homes and hospitals to reflect on their strengths and weaknesses in relation to having systems in place to ensure health and well-being are maximized. Examples are provided from a study of 100 care homes investigating the well-being of residents with dementia (CSCI, 2008); from the PEARL care-home programme (Baker, 2008; Valios, 2010); from current research into the experience of people with advanced dementia in care homes and from a new UK programme to develop a "dementia-friendly" acute hospital utilizing a care-bundle approach to deliver person-centered care. References: Alzheimer's Society (2007). *Home from home. A report highlighting opportunities for improving standards of dementia care in care homes*. London: Alzheimer's Society. Alzheimer's Society (2009). *Counting the Cost. Caring for people with dementia on hospital wards*. London: Alzheimer's Society. Baker, C (2008) *The power of learning through experience*. Journal of Dementia Care, 16(4), July/August.27–29. Brooker, D. (2004) *What is Person Centred Care for people with dementia?* Reviews in Clinical Gerontology 13 (3). 215–222. Brooker, D. (2007) *Person Centred Dementia Care: Making services better* London, Jessica Kingsley Publications CSCI-Commission for Social Care Inspection (2008) *See me, not just the dementia: Understanding peoples' experiences of living in a care home*. London. CSCI Hoe, J., Hancock, G., Livingston, G and Orrell, M. (2006). *Quality of life of people with dementia in residential care homes.* British Journal of Psychiatry, 188: 460–464. Kitwood, T. (1997). Dementia Reconsidered. Buckingham: Open University Press. Valios, N. (2010). *A Pearl of a dementia scheme*. Community Care, 29.4.10, pp. 24–25.

P06.03

Mind-body and manipulative therapies: Is there evidence for their efficacy in management of agitation?

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This session will review selected Complementary and Alternative Medicine (CAM) therapies, in particular massage, reflexology, and relaxation therapies, and their efficacy in dementia management. It is clear that without a cure for dementia the person with dementia and their carers will continue to look toward alternative therapies to halt the progression of the disease or to manage the symptoms. As the dementia progresses the focus in the mid-late stage of the disease often is on the heavy burden of emotional and behavioral problems and their impact on carer burden. Non-pharmaceutical or psychosocial interventions as they are more commonly called aim to prevent or treat agitated behavior, with the majority of these interventions focused on the person with dementia but also recognising the influence of the environment and care interactions. Although CAM and psychosocial interventions have a number of common features, CAM is defined as diverse medical and health systems, practices and products that are not generally considered to be part of conventional medicine. Whereas, complementary medicine refers to use of CAM together with conventional medicine, such as where one might use for example massage in addition to usual care to treat pain. CAM therapies are often grouped into broad categories such as natural products, mind-body medicine, and manipulative and body-based practices. However, some CAM therapies fit into more than one category. Natural products

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include herbal medicines, such as Ginkgo Biloba, and products that are not prescribed but may be regularly taken by the person with dementia. Mind-body practices focus on interactions among the mind, body and behavior and include practices such as yoga, meditation, Tai Chi, relaxation, CBT and guided imaginary. Manipulative and body based practices focus on the structures and systems of the body and this includes massage. CAM therapies tend to be focused on early stage dementia although families may opt to continue to use natural products late into the disease in the hope that these products may improve cognitive function or quality of life. Mind-body and manipulative practices may be encouraged in late stage dementia as a means of managing behavioral and psychological symptoms Although the majority of reviews and the author's own work suggests that mind-body and manipulative and body based therapies work in the short term the evidence is mixed or limited and requires rigorous study designs with a large number of participants. However, it is equally important that a broad clinical assessment is undertaken to understand the triggers of individual behavioral disturbance so that this can be dealt with before introducing a CAM intervention. Finally, it may be that CAM practices would be better focused not only on the person with dementia but should also include formal and family carers with the aim of improving the relationship.

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