

START psychological intervention versus treatment as usual with outcome HADS (hospital anxiety and depression scale) total, anxiety and depression subscales, HADS caseness and quality of life (HSQ). Costs were measured using the CSRI (Client Services Receipt Inventory). **Results:** At two- years, the follow-up rate was over 80%. We will report in the results of the intervention at two years according to both pre-specified primary analysis and sensitivity analysis in depression, depressive and anxiety symptoms and quality of life and on costs for people with dementia. **Conclusions:** Family carers for dementia require tailored affordable interventions to enable them to cope without becoming depressed. The intervention was manual based, standardised and supervised. The high fidelity ratings and lack of therapist clustering suggest the intervention can be delivered consistently. This manual based intervention can be taught to psychology graduates rapidly and delivered relatively cheaply. 1 Livingston G, Barber J, Rapaport P, Knapp M, Griffin M, King D et al. *BMJ* 2013;347:f6276. 2 Knapp M, King D, Romeo R, Schehl B, Barber J, Griffin M et al. *BMJ* 2013;347:f6342.

P4-346 **A PROVINCIAL POPULATION-BASED SURVEY ON ATTITUDES TOWARD WILL AND TESTAMENTARY CAPACITY OF INDIVIDUALS WITH DEMENTIA**

Tae-Young Hwang, Jeonbuk Provincial Maeumsarang Hospital, Wanju, South Korea. Contact e-mail: tyhwang73@naver.com

Background: With aging of society, the number of individuals with dementia is increasing, and the civil disputes which are potentially related to the will and the testamentary capacity of the individual with dementia are also estimated to be uprising. **Methods:** The target population is the registered residents in a province (Jeonbuk, South Korea), who are aged 19 years or older and the total number was 1,478,822(as of May 31, 2013). For sampling, confidence interval of 2 % and significance level of 5 % was considered, and a total of 2,540 were finally sampled and allocated for the even distribution of sex and age and for the proportional distribution of the population of the 14 counties. For this survey, structured questionnaire was used, which is composed of two main parts: 7-item general information (sex, age, residence, marriage status, academic credential, occupation, and income) and testamentary capacity-related questionnaire-12 items (TCRQ-12) comprising 4-item basic knowledge and 8-item specific situational questions with 5-point Likert scale. **Results:** First, the respondents showed significantly favorable attitudes for the guarantee of will-making or testamentary capacity of individuals with dementia (restriction although mild, 2.80(1.07) vs. guarantee although severe, 3.13(1.06); paired t-test, $t = -11.27$, $p < 0.001$). Second, disadvantageousness and undue influence are significant factors contributing to objection to the will of individuals with dementia (objection just for dementia (a), 3.11(1.02) vs. objection due to disadvantageousness (b), 3.23(1.04) vs. objection due to disadvantageousness and undue influence (c), 3.39(1.13); ANOVA, $F = 86.44$, $p < 0.001$; post hoc analysis (Scheffe), $a < b < c$). Third, in the pre-evaluation of testamentary capacity of individuals with dementia, the respondents showed response favorable for the evaluation by medical specialists over lawyers (lawyers, 3.31(1.13) vs. medical specialists, 3.40(1.10); paired t-test, $t = -4.92$, $p < 0.001$). Last, in acceptance of the post-hoc denial of self-related will due to dementia, negative response was relatively dominant over positive response (negative, 37.7 % vs. positive, 25.1 %; in total, 2.82(1.20)). **Conclusions:** The findings of this study show that it would be desirable that the will or will-making right of individual with dementia should be respected or guaranteed for maximum, suggesting that institutional and professional services might be significant and necessary for the prevention of civil disputes related to testamentary capacity.

P4-347 **THE GENDER DIFFERENCES OF THE EFFECTS OF FATAL DISEASES ON THE TRAJECTORY OF COGNITIVE FUNCTION AMONG MIDDLE-AGED AND OLDER ADULTS IN SOUTH KOREA**

Eun Jee Lee, Hey Jung Jun, Yonsei University, Seoul, South Korea. Contact e-mail: leejeniffer@hanmail.net

Background: While many studies have reported associations between fatal diseases and mental health such as depression and life satisfaction, the effects of fatal diseases on cognitive function, one of the important factors of quality of late life, have hardly been investigated so far. Thus, this study was conducted to examine how fatal diseases impact the cognitive function of middle and older adults, especially in the context of South Korea. **Methods:** The dyadic data, transformed from the three waves of the nationally representative survey, Korean Longitudinal Study of Ageing (KLoSA), was used. The sample consisted of couples who had maintained their marital relationship from wave 1 to wave 3, consisting of 2040 males and 2012 females whose spouses reported no fatal diseases throughout the waves. Males and females who reported through all waves to have one or more fatal diseases such as cancer, heart disease and stroke were coded 1 and who did not report any such disease were coded 0. Cognitive function was measured by the Korean version of the Mini-Mental State Exam (K-MMSE) and Latent Growth Models were used to analyze the data with the marital status of patients and the health status of the spouses of the sample controlled for. **Results:** The results showed gender differences in the effects of fatal diseases on cognitive function. While both males and females indicated lower levels of cognitive function at wave 3 when they had fatal diseases, there was a significant effect on the trajectory of cognitive function for only females with fatal diseases, which suggested a higher rate of decline in cognitive function over time. **Conclusions:** Given the results, it is necessary to draw up measures to minimize the negative effects of fatal diseases to prevent the acceleration of decline in cognitive function, especially in the case of female patients suffering from long term fatal diseases. Future research also needs to investigate the associations between fatal diseases and cognitive function more and its underlying mechanism.

P4-348 **SOCIAL BIOMARKERS FOR EARLY SIGNS OF DEMENTIA: INCREASED SPOKEN WORD COUNTS AMONG OLDER ADULTS WITH MILD COGNITIVE IMPAIRMENT (MCI)**

Jeffrey Kaye¹, Mattie Gregor¹, Nora Mattek¹, Meysam Asgari¹, Molly Bowman¹, Oscar Ybarra², Hiroko Dodge³, ¹Oregon Health & Science University, Portland, Oregon, United States; ²University of Michigan, Ann Arbor, Michigan, United States; ³Oregon Health & Science University/University of Michigan Health System, Portland, Oregon, United States. Contact e-mail: kaye@ohsu.edu

Background: It is of significant importance to detect early signs indicating the transition from normal cognitive aging to MCI. Although biomarkers have been extensively examined as early indicators of the pathological process for AD, assessing these biomarkers is expensive and challenging. Behavioral activity markers offer an alternative tool for detection of those in transition. We hypothesized that MCI subjects talk more than age-gender-matched normal peers in freely-enacted conversations, possibly due to their impaired ability in identifying social cues required for smooth interactions or in self-monitoring, organizing and conveying thoughts. This hypothesis was examined in a sub-study within a randomized controlled clinical trial (RCT) that assessed whether daily 30 minute face-to-face semi-structured conversations with trained interviewers via webcam and Internet-enabled personal computers improves cognitive function among those with either normal cognition or MCI (ClinicalTrials.gov: NCT01571427). **Methods:** Proportions of total words spoken by participants (vs. by interviewers) during recorded conversational sessions in the RCT were compared between those with MCI and normal cognition (project A). Recorded conversations were transcribed by a single transcriber. As an exploratory study (project B), average total talk time per day spoken by each participant in daily life collected through a small wearable digital recording device was also examined by state-of-the-art speech detection algorithms. 41 subjects in the conversational experimental group with valid recorded sessions (project A) and 45 subjects who consented to record their daily conversation (project B) were used in this study. Interviewers were blind to cognitive status of the subject. **Results:** The mean (SD) % of words spoken by participants was higher ($p < 0.01$) among MCI (69.5% (9.7)) than normal (60.3% (11.4)) subjects in linear regression models adjusting for age and

gender. MCI participants spoke longer ($p=0.037$) by 105 minutes on average per day during daily life than normal subjects in GEE models controlling for age, education, gender and living arrangement. **Conclusions:** MCI subjects may exhibit subtle language processing deficits that affect social cognitive abilities required for smooth social interactions, leading to more words spoken during conversations or longer daily talking time. The assessment approach used here may provide an ecologically valid behavioral marker sensitive to transitions to MCI.

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A MULTICENTER, RANDOMIZED TRIAL TO ASSESS EFFICACY OF HOME-BASED AND GROUP COGNITIVE INTERVENTION PROGRAMS FOR AMNESTIC MILD COGNITIVE IMPAIRMENT

Hae Ri Na¹, Seong H. Choi², Jee-Hyang Jeong³, JungEun Kim⁴, Duk L. Na⁵, Sang Won Seo⁵, Juhee Chin⁶, Sun A. Park⁷, Eun-Joo Kim⁸, Hyun Jeong Han⁹, Seol-Heui Han¹⁰, Jae-Hong Lee¹¹, Soo Jin Yoon¹², Kyung Won Park¹³, So Young Moon¹⁴, Moon-Ho Park¹⁵, Mun Seong Choi¹⁶, Il-Woo Han¹⁷, Jun Hong Lee¹⁸, Jung Seok Lee¹⁹, ¹Bobath Memorial Hospital, Seongnam, South Korea; ²Inha University School of Medicine, Incheon, South Korea; ³Ewha Womans University Mokdong Hospital, Seoul, South Korea; ⁴College of Medicine, Seoul National University, Seongnam-si, South Korea; ⁵Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, South Korea; ⁶Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, South Korea; ⁷Soonchunhyang University Bucheon Hospital, Bucheon-si, South Korea; ⁸Pusan National University Hospital, Pusan, South Korea; ⁹Kwandong University College of Medicine, Koyang, South Korea; ¹⁰Konkuk University Medical Center, Seoul, South Korea; ¹¹Asan Medical Center, University of Ulsan College of Medicine, Seoul, South Korea; ¹²Eulji University School of Medicine, Daejeon, North Korea; ¹³Dong-A University College of Medicine, Busan, South Korea; ¹⁴Ajou University School of Medicine, Suwon, North Korea; ¹⁵Korea University College of Medicine, Ansan, North Korea; ¹⁶Hallym Hospital, Seoul, South Korea; ¹⁷Yong-in Hyoja Geriatric Hospital, Yongin, North Korea; ¹⁸National Health Insurance Service Ilsan Hospital, Goyang-si, South Korea; ¹⁹Jeju National University School of Medicine, Jeju, South Korea. Contact e-mail: neuna102@paran.com

Background: The previous studies have failed to show consistently that cognitive intervention is efficacious in amnesic mild cognitive impairment (MCI). There is a need for good quality trials examining the efficacy of cognitive interventions in MCI. The objectives of this study are to assess the efficacy of home-based and group cognitive intervention programs in amnesic MCI. **Methods:** Randomized and single-blind trial for a 12-week cognitive intervention conducted at 18 hospitals in South Korea from March 2011 to January 2013. A total of 293 participants with amnesic MCI were randomly assigned to group cognitive intervention ($n=95$), home-based cognitive intervention ($n=98$), or waitlist control ($n=100$). Participants were assessed at post-intervention, 3 months' follow-up, and 6 months' follow-up. Primary efficacy measure was a change from baseline in the modified Alzheimer Disease Assessment Scale-cognitive subscale (ADAS-Cog) after 12 weeks of intervention. Secondary efficacy measures evaluated cognition, behavior, Quality of life (QOL), and function. **Results:** A total 25 of 95 participants (26.3%) from the group cognitive intervention group and 21 of 98 participants (21.4%) from the home-based cognitive intervention group withdrew the intervention and 23 of 100 participants (23.0%) withdrew from the control group. The participants in the group cognitive intervention and the home-based cognitive intervention groups improved 2.24 points (Standard Deviation (SD) = 4.66, $p=0.02$ vs. controls) and 2.43 points (SD = 4.45, $p=0.03$ vs. controls), respectively and those in the control group improved 0.84 points (SD = 4.79) on the modified ADAS-cog at the end of the intervention. At 6 months' follow-up, modified ADAS-cog, immediate story recall test, Prospective Memory test, Prospective and Retrospective Memory Questionnaire (PRMQ), and Caregiver-Administered Neuropsychiatric Inventory scores significantly favored group cognitive intervention compared with controls. At 6 months' follow-up, modified ADAS-cog, Sum of Boxes of Clinical Dementia Rating scale, PRMQ, and

QOL-Alzheimer's disease scores significantly favored home-based cognitive intervention compared with controls. **Conclusions:** The group and home-based cognitive intervention programs were effective to improve cognition, QOL, and behavior in amnesic MCI.

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WORD RETRIEVAL IN PRIMARY PROGRESSIVE APHASIA FOLLOWING LANGUAGE THERAPY

Theresa Raiser¹, Karen Croot², Lyndsey Nickels³, Cathleen Taylor⁴, Nibal Ackl⁵, Elisabeth Wlasich⁶, Gisela Stenglein-Krapf⁵, Axel Rominger⁵, Adrian Danek⁶, ¹Universitätsklinikum LMU, Munich, Germany; ²University of Sydney, Sydney, Australia; ³Macquarie University, Sydney, Australia; ⁴War Memorial Hospital, Waverley, Australia; ⁵Universitätsklinikum LMU, Munich, Germany; ⁶Universitätsklinikum LMU, München, Germany. Contact e-mail: theresa.raiser@med.uni-muenchen.de

Background: Primary Progressive Aphasia (PPA) is a neurodegenerative disease with its most prominent symptom being impaired language at the early stage. As the syndrome progresses the clinical symptoms of PPA worsen. Impaired word retrieval is one of the core symptoms of PPA and consequently communication is often restricted. However, there are few evidence-based treatments available for PPA. Aim: The aim of this study was to evaluate the efficacy of a therapy for word retrieval in PPA using a series of single case experimental designs. We predicted that treated items should be retrieved more easily following therapy, in comparison to untreated items, bearing in mind that the default pattern in a neurodegenerative condition is for a worsening of performance. Treatment should also result in improved word retrieval for the treated items in the patient's spontaneous speech in comparison to untreated words. **Methods:** Three patients with PPA were recruited through the German Research Consortium of frontotemporal lobar degeneration. They were enrolled in a treatment programme, which used an adaptation of the Croot, Taylor and Nickels Sydney protocol. Items for treatment ($n \geq 120$) were selected individually for each participant. Two matched sets of words ($n \geq 30$ each) were treated with an errorless learning technique (repetition and reading in the presence of a picture, RRIPP) in two successive treatment phases. The remaining stimuli ($n \geq 60$) served as a control set. The therapy was carried out independently (without a clinician) using delivery via a computer for two (one set) and four weeks (other set). One patient underwent further six months of training of all items. Outcome measures were accuracy of confrontation naming for treated items and untreated items and carry over into spontaneous speech measured using a semi-structured interview. **Results:** In one out of three patients significant improvement in naming performance was recorded for treated items but not for untreated items. The other two patients' showed no change in performance over the therapy period, despite comprehension worsening in one of these patients. These results are interpreted as a positive effect of treatment in the context of a neurodegenerative disease where performance (without treatment) is expected to decline. The patient who improved significantly kept practising for another six months and further improved his naming skills. The other two patients stopped the training independently. **Conclusions:** No change was shown in untreated items over the same time period, which is interpreted positively. Transfer to spontaneous speech was absent. Nonetheless, positive results for the patients' mood were present due to therapy measured with the Beck Depression Inventory. In summary, despite the progressive nature of PPA language therapy can produce improved performance for treated stimuli and hence is appropriate for patients with PPA.

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A PLASMA PHOSPHOLIPID BIOMARKER PROFILE FOR DETECTING PRECLINICAL ALZHEIMER'S DISEASE CAN BE MODIFIED BY ORAL INTAKE OF NUTRIENTS THAT INCREASE PHOSPHOLIPID SYNTHESIS

Tobias Hartmann¹, Nick van Wijk², Richard J. Wurtman³, Marcel G.M. Olde Rikkert⁴, John W.C. Sijben², Hilka Soininen⁵, Bruno Vellas⁶, Philip Scheltens¹, ¹Saarland University, Homburg, Germany; ²Nutricia Research, Utrecht, Netherlands; ³Massachusetts Institute of Technology, Cambridge, Massachusetts, United States;