The 19th World Congress on CONTROVERSIES IN NEUROLOGY
20-22.3.2025 Prague, Czech Republic

122

Alzheimer's Disease and Dementia

From Perception to Plate: Exploring Mediterranean Diet and Dementia Prevention Through the Health Belief Model

Ofer Emanuel Edelstein

Background: Dementia is incurable; however, it can be prevented by adopting certain health behaviors, particularly following the Mediterranean diet (MD). This study had two main objectives: (i) to assess the adherence to the MD in individuals aged 50 and above who were born in Israel, and (ii) to investigate the relationship between variables of the Health Belief Model (Rosenstock, 1966, 1974) and adherence to MD.
Method: This cross-sectional study utilized an online convenience sampling in 2022-2023. The study included 512 Israel-born participants aged 50 years or older. MD was assessed using I-MEDAS (Israeli Mediterranean Diet Adherence Screener (Abu-Saad et al., 2018). Cognitive perceptions were assessed using the Motivation to Change Lifestyle and Health Behaviors for Dementia Risk Reduction questionnaire (Kim et al., 2014).
Results: In the current research, the average score concerning the MD was 9.35 (1.36 SD) out of 17 possible points. A multivariate linear regression indicated that among all of the Health Belief model's variables, perceived severity (β=-.204, p.001) and cues to action (β=.194, p.001) emerged as significant predictors of adherence to MD. Additionally, being female (β=.192, p.001) and having a low income (β=-.156, p.05) were also found to predict adherence to the MD. The model explained 15.7% of the variance in the adherence to MD [F(4,505)=15.56, p.001].
Conclusions: The current research underlines the role of health cognitions (perceived severity and cues for action) regarding adherence to MD. The results of the current study might serve as a basis for intervention programs among various target populations.

The 19th World Congress on CONTROVERSIES IN NEUROLOGY
20-22.3.2025 Prague, Czech Republic

128

Alzheimer's Disease and Dementia

Rapid amyloid clearance and efficacy: Results from TRAILBLAZER-ALZ 2, a phase 3 study of donanemab for treatment of early Alzheimer`s disease

Sergey Shcherbinin[1], Ming Lu[1], Jian Wang[2], Hong Wang[3], Paula Hauck[4], Ivelina Gueorguieva[5], Dawn Brooks[6], John Sims[7], Mark Mintun[8], Emily Collins[9], **Mihaela Nica**[10]
[1]*Imaging Medical R&D Platform R&D, Eli Lilly and Company, USA*
[2]*Statistics, Eli Lilly and Company, USA*
[3]*Neurodegeneration - Alzheimer's, Eli Lilly and Company, USA*
[4]*GSC Pubs Neuroscience, Eli Lilly and Company, USA*
[5]*PK/PD Project Leaders, Eli Lilly and Company, USA*
[6]*Neuroscience, Eli Lilly and Company, USA*
[7]*Alzheimer's Disease Development - Neurodegeneration, Eli Lilly and Company, USA*
[8]*Lilly Research Laboratories, Eli Lilly and Company, USA*
[9]*Avid, Eli Lilly and Company, USA*
[10]*Medical Affairs CEE, Eli Lilly and Company, USA*

Background: The aim of this analysis was to explore the impact of rapid amyloid clearance (rAC) on downstream biomarkers and clinical efficacy.

Methods: In TRAILBLAZER-ALZ 2, participants were randomized to receive (1:1) donanemab (n=860) or placebo (n=876) intravenously every 4 weeks (w) for 72w. Donanemab-treated participants were determined as achieving rAC during the trial if the brain amyloid level was below 24.1 Centiloids at either 24w or 52w as measured by amyloid PET (positron emission tomography). Propensity score matching method was used to select matched placebo-treated participants comparable with donanemab-treated participants with rAC in terms of baseline age, amyloid level, global tau level, and number of APOLIPOPROTEIN ε4 alleles (mPlacebo). At 76w, the biomarker and clinical measurements were compared between the two matched groups.

Results: The rAC group had significantly less accumulation of tau (AD-signature-weighted neocortical SUVr as determined by PET) at 76w compared to mPlacebo [adjusted mean (SE) change from baseline: 0.0684 (0.006) for mPlacebo, and 0.0461 (0.006) for rAC, difference (SE): -0.0223 (0.008), P=0.007]. The adjusted mean change from baseline of plasma P-tau217 and plasma glial fibrillary acidic protein were both significantly different from mPlacebo (0.001). Adjusted mean change in integrated AD Rating Scale score (SE) at 76w was -11.5 (0.62) in the mPlacebo group, and -7.6 (0.62) in the rAC group [adjusted mean difference from mPlacebo, 3.86 (0.89) P0.001], representing a 33.6% slowing of disease progression.

Conclusion: These results demonstrate the downstream effect of donanemab-induced rAC on biomarker and clinical efficacy measurements.

143

Alzheimer's Disease and Dementia

Beyond Traditional Screening: AI-Driven Early Detection of Cognitive Disorders and Dementia

Zoltán Gelencsér[1], Erika Simonova[2], **László Varga**[3], Mária Dr. Sátori[4]
[1]*Head Of Development, Netis Informatics Ltd., Hungary*
[2]*Quality and patient safety manager, Health Expert, ALSAD MEDICAL, Hungary*
[3]*Digital Health Expert, Alsad Medical, Hungary*
[4]*Neurologist, Head Physician, S-Medicon, Hungary*

In Hungary, the process of diagnosing dementia is slow and time-consuming. Currently, there are no well-developed systems and strategies at the local level for screening, and there is no artificial intelligence algorithm that could determine early signs of dementia based on the patient`s digital behavioral patterns.

Two PILOTs were conducted using the PreDem platform. Over the PILOTs` duration (2021.09.01.-2024.01.11), 42,711 test data were analyzed. The 259 participants completed SDMT-type tests, Stroop tests, and memory/word games.

We established a unified system for task evaluation, facilitating cross-test result comparisons. Participants were grouped into three categories: 1st - presumed dementia patients, 2nd - diagnosed MS patients, and 3rd - presumably normal population. Comparing the first two groups to the normal population revealed significant differences, vividly illustrated by density functions. Our results show that the first symptoms of dementia can appear as early as the 20s-30s, and can be clearly detected in the 40s and 50s.

The platform used in the study is a promising new tool for the early detection and prevention of dementia. During the PILOT studies, the platform reliably identified dementia patients, significantly surpassing the accuracy of traditional diagnostic methods. Therefore, it can be said that this method is suitable for detecting the first, otherwise unnoticed signs of dementia through risk analysis based on artificial intelligence processing. Early detection is crucial for effective management of dementia. Early diagnosis allows patients to begin necessary treatments, which can slow the progression of the disease, preserve cognitive functions, and improve quality of life.

146

Alzheimer's Disease and Dementia

Association Between Body Mass Index and the Survival in Older Patients with Dementia

Zviadi Maglapheridze[2,3], Vera Kapetivadze[1,2,3], Tamar Lazashvili[1,2,3], Irina Kapetivadze[1,2,3], Davit Tananashvili[2,3]
[1]*Propedeutics, Tbilisi State Medical University, Georgia*
[2]*Propedeutics, Tbilisi State Medical University, Georgia*
[3]*Propedeutics, Tbilisi State Medical University, Georgia*

Objectives. The aim of our study was to identify the peculiarities of survival depending on body mass index (BMI) in patients with dementia and eating disorders. Methods. Cross-sectional observational study was performed from 2020 to 2023 in palliative clinic “Palmedi” of Tbilisi State Medical University. The study group consisted of 77 patients with dementia (18 males, 59 females; mean age - 78.0 □ 11.1). Dementia was assessed by Mini-Mental State Examination (MMSE) and Clinical Dementia Rating (CDR) scale. Serum resistin levels were measured by enzyme-linked immunoessay (ELISA). The study group was divided by the three groups according BMI values: the group 1 (BMI25 kg/m2; n=12; 15.6%). Survival rates during 25 weeks of the study were assessed by the tools of survival analysis. Results. 25-weeks survival rate for the study group was 20.8%. 50%-survival was observed on 7th week of the study. The survival rate for the group 1 was 13.6%; for the study group 2 – 28.6%, and for the study group 3 – 33.3%. 50%-survival 50%-survival for the study group 1 was observed on 6th week of the study, for the study group 2 - on 14th week of the study; for the study group 3 - on 20th week of the study. Hazard ratio (HR) between the groups 1 and 2 was HR=1.78 (95%CI – 1.03-3.09, p=0.047); between the groups 1 and 3 was HR=2.38 (95%CI – 1.29-4.41, p=0.021); between the groups 2 and 3 was HR=1.40 (95%CI – 0.62-3.21, p=0.435) Conclusion. BMI had impact on the survival rates of the patients with dementia. Therefore, decreased values of BMI may be considered as a predictor of bad outcome.

175

Alzheimer's Disease and Dementia

The effect of different donanemab dosing regimens on ARIA-E and amyloid lowering in adults with early symptomatic alzheimer's disease: primary outcome results from TRAILBLAZER-ALZ 6

Hong Wang[1], Emel Serap Monkul Nery[1], Paul Ardayfio[2], Rashna Khanna[2], Diana Svaldi[1], Ivelina Gueorguieva[3], Sergey Shcherbinin[1], Scott Andersen[4], Paula Hauck[5], Dawn Brooks[1], Emily Collins[6], Mark Mintun[1], John Sims[7], **Mihaela Nica**[8]
[1]*Neurodegeneration R&D, Eli Lilly and Company, USA*
[2]*Global Patient Safety Medical, Eli Lilly and Company, USA*
[3]*PK/PD Project Leaders, Eli Lilly and Company, USA*
[4]*Statistics-Neuroscience / Urology, Eli Lilly and Company, USA*
[5]*Scientific Communications Publications, Eli Lilly and Company, USA*
[6]*Medical Affairs Project Management, Eli Lilly and Company, USA*
[7]*Alzheimer's Disease Development – Neurodegeneration, Eli Lilly and Company, USA*
[8]*Medical Affairs CEE, ELI LILLY ČR, s.r.o, Czech Republic*

Background: Amyloid-related imaging abnormalities (ARIA) have been observed with amyloid-targeting therapies, including donanemab. TRAILBLAZER-ALZ 6 (NCT05738486) assessed the impact of different donanemab dosing regimens on the frequency of ARIA-E in relation to amyloid reduction.

Methods: This was a multicenter, randomized, double-blind, phase 3b study in adults with early symptomatic AD. Participants (n=843) were stratified by APOE genotype and baseline amyloid levels and randomly assigned to the standard dosing arm or one of 3 alternative dosing arms in a 1:1:1:1 ratio. Relative risk reduction of ARIA-E by week 24 was analyzed through Bayesian logistic regression. Brain amyloid level (as measured by positron emission tomography) and plasma P-tau217 level were also assessed.

Results: By week 24, the frequency of ARIA-E was 23.7% for the standard dosing arm, and 18.6%, 13.7%, and 18.3% for the 3 alternative dosing arms. The modified titration dosing regimen with the lowest ARIA-E (13.7%) had a 41% reduction in the relative risk of ARIA-E compared to the standard dosing arm. The ARIA-E radiographic severity in the modified titration arm was significantly less. The symptomatic ARIA-E frequency was 2.8% in the modified titration arm compared to 4.8% in the standard arm. Participants had significant amyloid reduction with adjusted mean (SE) change of 58.8 (1.8) Centiloids in the standard arm, 56.3 (1.7) in the modified titration arm. Plasma P-tau217 reductions at 24 weeks were similar in all dosing arms as well.

Conclusions: This study suggests that a modified titration approach may limit ARIA risk while maintaining sufficient amyloid reduction.

192

Alzheimer's Disease and Dementia

Efficacy of Ipidacrine in Enhancing Cognitive Function and Quality of Life in Mild Cognitive Impairment: A Single-Blind Randomized Controlled Trial

Ia Rukhadze[1], Davit Tabatadze[1], Giorgi Matchavariani[1], Otar Koniashvili[2]
[1]*Neurology, Central University Clinic, Georgia*
[2]*Neurology, MediClubGeorgia Medical Center, Georgia*

Background: Ipidacrine, a reversible acetylcholinesterase inhibitor, enhances cholinergic neurotransmission by inhibiting acetylcholinesterase and blocking potassium channels, facilitating impulse transmission in the central nervous system. Preclinical studies have demonstrated ipidacrine`s potential in improving memory and cognitive functions. This study evaluates the efficacy of ipidacrine in enhancing cognitive function and quality of life (QoL) in patients with mild cognitive impairment (MCI).
Methods: This single-blind, randomized controlled trial aims to enroll 102 ambulatory patients aged ≥50 years diagnosed with MCI (MMSE score ≥19). Participants are randomized into two groups: an intervention group receiving ipidacrine and a control group receiving standard care. Randomization is conducted via an electronic platform to ensure unbiased allocation. Cognitive function is assessed using the Mini-Mental State Examination (MMSE), and QoL is evaluated with the DEMQOL questionnaire at baseline, 3 months, and 6 months. Independent evaluators, blinded to group assignments, conduct all assessments to minimize bias.
Results: As of now, 45 participants have been enrolled. Preliminary analyses suggest that the ipidacrine group demonstrates improvement in MMSE scores and DEMQOL ratings compared to the control group. The treatment has been well-tolerated, with no significant adverse effects reported. Ongoing statistical analyses are accounting for potential confounders such as age and education level.
Conclusions: Early findings indicate that ipidacrine may improve cognitive function and QoL in patients with MCI. The completion of this single-blind trial with the full cohort will provide robust evidence regarding ipidacrine`s therapeutic potential in MCI management.

253

Alzheimer's Disease and Dementia

Identification and evaluation of potential microRNA markers for diagnostics in Neurodegenerative Diseases and correlation with other biochemical markers

Richard Novobilsky[1,2], Pavlína Kušnierová[3,4], Dominik Štěpán[3], Bártová Petra[1,2], David Stejskal[3,4], Michal Bar[1,2]

[1]*Clinic of Neurology, University Hospital Ostrava, Czech Republic*
[2]*Department of Clinical Neuroscience, University of Ostrava, Czech Republic*
[3]*Department of Clinical Biochemistry, University Hospital Ostrava, Czech Republic*
[4]*Institute of Laboratory Medicine, University of Ostrava, Czech Republic*

Objectives: MicroRNAs are short, non-coding RNA molecules essential for organism development and various biological processes. They are potential biomarkers for numerous diseases. This study aimed to identify microRNA targets that can differentiate neurodegenerative diseases and establish correlations between selected miRNAs across diagnostic groups.

Methods: The study included the analysis of 126 patients. The patients were divided into five diagnostic groups: Alzheimer’s disease, non-Alzheimer’s dementia, Movement disorder, Dementia and movement disorder, and Healthy controls. The circulating RNA was isolated using the iCatcher Circulating cfRNA 1000 Kit with the iCatcher 12 automated isolator. The determination of microRNA was performed by TT-qPCR in the CFX96™ Real-Time Detection System. The concentrations of the remaining biomarkers were determined by ELISA. The statistical data were processed using MS Excel and MedCalc® software.

Results: The following microRNAs were studied based on the primary screen for identification of potential microRNA targets and published literature data:hsa-miR-23a-3p, hsa-miR-29c-3p, hsa-miR-30b-5p, hsa-miR-142a-5p, hsa-miR-146a-5p, hsa-miR-151a-3p. A statistically significant correlation was identified between hsa-miR-29c-3p and hsa-miR-30b-5p, hsa-miR-30b-5p and hsa-miR-151a-3p, hsa-miR-23a-3p and hsa-miR-29c-3p, hsa-miR-23a-3p and hsa-miR-151a-3p, between hsa-miR23a-3p and hsa-miR-30b-5p, between hsa-miR-142a-5p and hsa-miR-146a-5p, hsa-miR-142a-5p and hsa-miR-151a-3p, between hsa-miR-146a-5p and hsa-miR-151a-3p. Significant differences were observed in hsa-miR-23a-3p and hsa-miR-29c-3p among different diagnostic groups. Compared to classical biomarkers of dementia, significant correlations were observed between plasmatic amyloid-β peptide 42 and hsa-miR-29c-3p, hsa-miR-142a-5p, hsa-miR-146a-5p, hsa-miR-151a-3p.

Conclusions: The most promising microRNAs for differentiating among neurodegenerative diseases are hsa-miR-23a-3p and hsa-miR-29c-3p. Additionally, there is a correlation between hsa-miR-29c-3p and amyloid-β peptide and the ratio of amyloid-β peptide 42/40.

267

Alzheimer's Disease and Dementia

Feasibility and Efficacy of GOLD-Cog+: a novel combined cognitive intervention for healthy older adults

Eliane Gefen[1,2], Yafit Gilboa[1], Mor Nahum[1], Amit Lampit[2]
[1]*School of Occupational Therapy, Hebrew University of Jerusalem, Israel*
[2]*Department of Psychiatry, The University of Melbourne, Australia*

Background: With dementia cases projected to reach 78 million by 2030 and 139 million by 2050, effective prevention strategies are urgently needed. Cognitive training based on neuroplasticity principles can enhance cognitive reserve, potentially delaying cognitive decline and preserving functional independence. While computerized cognitive training (CCT) improves cognition in healthy older adults, its impact on daily functioning remains mixed. This study examined the feasibility and efficacy of GOLD-Cog+, a novel approach combining individual CCT with group goal-directed training, in improving cognitive, affective, and functional abilities.

Methods: Sixty-five community-dwelling older adults (age ≥65) with at least sub-clinical depression (PHQ-8 ≥ 5) and minimal or no cognitive decline (MoCA ≥ 20) were recruited to a randomized controlled crossover trial. Participants completed baseline assessments, were randomized to GOLD-Cog+ or a waitlist for six weeks, and then crossed over to the opposite group, concluding with follow-up assessments. Outcome measures included cognitive control, daily functioning, depressive symptoms, subjective cognition, rumination, anxiety, and quality of life.

Results: Of the 151 participants approached, 65 completed baseline assessments (43% recruitment), 59 were randomized, and 56 completed post-intervention assessments (95% retention). Participants reported high satisfaction with the intervention. A small but significant improvement in cognitive control was observed ($t(51) = 3.58$, p 0.001; mean difference = 0.18).

Conclusion: GOLD-Cog+ demonstrates excellent feasibility, high retention, and initial efficacy in older adults. This cost-effective intervention has the potential to preserve cognition, improve mental health, and enhance daily functioning in older populations.

295

Alzheimer's Disease and Dementia

Will Lecanemab Improve Outcomes for Patients with Alzheimer’s Disease?

Maryam Halabi[1], Mohamad Abu-Zaher[1], Shruti Darak[1], Senera Hathurusinghe[1]
Medicine, Anglia Ruskin University, United Kingdom

Alzheimer’s disease (AD) is a progressive neurodegenerative disorder and the most common cause of dementia. While current treatments, such as cholinesterase inhibitors like Rivastigmine, offer symptomatic relief, they do not significantly alter disease progression. In recent years, disease-modifying therapies (DMTs), particularly monoclonal antibodies (MABs), have shown potential in slowing the progression of the disease by targeting amyloid-beta (Aβ) plaques, a hallmark of AD pathology.

This poster evaluates the efficacy of Lecanemab (MAB), in slowing cognitive decline compared to standard-of-care (SoC) treatments and placebo. Research papers were collated using journal databases, with the search term ‘Lecanemab’, filters were applied to the search to find relevant articles about Lecanemab and its effect on clinical outcomes. Phase 2 double-blind clinical trials assessed Lecanemab’s impact using the Alzheimer’s Disease Composite Score (ADCOMS) and volumetric MRI analysis. Results showed a 28.5% reduction in clinical decline at an 18-month endpoint in patients receiving Lecanemab. MRI findings suggest reduced hippocampal atrophy and brain volume loss in the Lecanemab group.

Long-term outcome predictions, using simulation models, suggest that Lecanemab combined with SoC could extend survival by 1.03 years and improve quality-adjusted life years (QALYs) by 0.75 years. Patients on this regimen also demonstrated prolonged independence, spending an estimated 11.6 more years in community care.

Despite promising findings, limitations include reliance on modeling for long-term projections and the need for further investigation into hyperphosphorylated tau accumulation. Phase 3 trials are essential to validate these results, but this research highlights a potential breakthrough in AD treatment.