



July 15, 2014

New Data Shows Cognitive Impairment Precedes and Predicts Subsequent Functional Impairment in Patients with Mild Alzheimer's Disease

Study Results Presented at the Alzheimer's Association International Conference 2014

INDIANAPOLIS, July 15, 2014 /PRNewswire/ -- Today, Eli Lilly and Company (NYSE:LLY) announced results from an analyses of five datasets evaluating the relationship between cognitive and functional impairment in patients with mild Alzheimer's disease in the natural course of the disease. Analysis findings demonstrate that cognitive deficits predict subsequent functional deficits and suggest that cognitive decline experienced by patients is followed by an observable related decline in function, consistent with previously proposed hypotheses.¹ These data were presented today at the Alzheimer's Association International Conference 2014 (AAIC 2014) in Copenhagen, Denmark as part of the featured research session, "Statistics in the Race against Alzheimer's Disease."

"These data support the concept that decline in cognition is later reflected in changes in function. This suggests that with treatments that target the underlying neuropathology of disease, effects on function may take longer to observe in clinical studies," said Hong Liu-Seifert, Ph.D., study research advisor at Eli Lilly and Company. "Currently available scales were not developed to assess subtle functional changes or treatment effects on these deficits in patients with early or mild Alzheimer's disease, and there is debate as to how much variability exists in these scales globally. Therefore, we support discussion of alternative ways to demonstrate clinical meaningfulness in early or mild Alzheimer's disease."

The objective of the study was to better understand the relationship between cognitive and functional decline in mild Alzheimer's disease by using pooled data from placebo patients from the solanezumab EXPEDITION and EXPEDITION2 trials and the semagacestat IDENTITY and IDENTITY2 trials, as well as data from the Alzheimer's Disease Neuroimaging Initiative study (ADNI), which is an observational study.

The results from the analyses of the placebo data from the EXPEDITION and EXPEDITION2 trials demonstrated that cognitive impairment significantly predicted future functional impairment in five out of six time points. When the same analysis method was used to test the opposite hypothesis, results showed that functional scores predicted cognitive outcomes in only one out of six time points. The data from the IDENTITY and IDENTITY2 trials were more limited due to early termination of the trials and a smaller sample size, but the analyses still yielded consistent results that cognitive impairment predicted subsequent functional impairment. Analyses based on the mild patients from the ADNI study had similar limitations of small sample size but again replicated the findings that cognitive impairment predicted future functional impairment. These similar findings were observed even though the ADNI study used a different functional measure, the Functional Activities Questionnaire (FAQ).

Analysis Methods

Data from placebo patients with mild Alzheimer's disease (Mini-Mental State Examination score 20 to 26) were pooled from the Phase 3 solanezumab studies, EXPEDITION and EXPEDITION2, and separately for the two semagacestat studies, IDENTITY and IDENTITY2. Cognitive and functional outcome measures were assessed at baseline and six post-baseline time points every three months for 18 months using the Alzheimer's disease Assessment Scale-Cognitive subscale (ADAS-Cog14) and the Alzheimer's disease Cooperative Study-Activities of Daily Living instrumental subscale (ADCS-iADL). Data from mild Alzheimer's disease patients in ADNI were also analyzed where the ADAS-Cog was used to measure cognition and the Functional Activities Questionnaire (FAQ) was used to measure function. Auto-regressive cross-lagged panel analyses were used to evaluate the relationships between cognitive and functional impairment over time.

About Alzheimer's Disease

Alzheimer's disease is a fatal illness that causes progressive decline in memory and other aspects of cognition.² It is the most common form of dementia, accounting for 60 to 80 percent of dementia cases.² There are currently an estimated 44 million people living with dementia worldwide.³ The number of people affected by dementia is expected to be more than 75 million in 2030 and 135 million in 2050.³

About Eli Lilly and Company

Lilly is a global healthcare leader that unites caring with discovery to make life better for people around the world. We were founded more than a century ago by a man committed to creating high-quality medicines that meet real needs, and today we remain true to that mission in all our work. Across the globe, Lilly employees work to discover and bring life-changing medicines

to those who need them, improve the understanding and management of disease, and give back to communities through philanthropy and volunteerism. To learn more about Lilly, please visit us at www.lilly.com and <http://newsroom.lilly.com/social-channels>.

P-LLY

¹ Zahodne LB, Manly JJ, MacKay-Brandt A, Stern Y. Cognitive Declines Precede and Predict Functional Declines in Aging and Alzheimer's Disease. *PLoS ONE*. 2013; 8(9).

² Alzheimer's Association. 2014 Alzheimer's Disease Facts and Figures. http://www.alz.org/downloads/facts_figures_2014.pdf. Accessed June 4, 2014.

³ Alzheimer's Disease International. The Global Voice on Dementia. <http://www.alz.co.uk/research/GlobalImpactDementia2013.pdf>. Accessed June 4, 2014.

Refer to: Stefanie Prodouz, +1 (317) 224-5331, prodouzs@lilly.com



Logo - <http://photos.prnewswire.com/prnh/20031219/LLYLOGO>

SOURCE Eli Lilly and Company

News Provided by Acquire Media