New Data Demonstrated Cognigram™ as a Useful Tool in Assessing Cognitive Function

MONTREAL, QUEBEC, July 17, 2013 – New data provided evidence of a useful new tool in the detection and monitoring of cognitive impairment in aging and dementia. The data showed the clinical utility of Cognigram™ to identify cognitive impairment in people with and at risk of Alzheimer’s disease (AD). The data was presented at the Alzheimer’s Association International Conference (AAIC), currently taking place in Boston, Massachusetts between July 13 and 18.

“As an innovative cognitive online evaluation tool, Cognigram™ was developed to broadly assess four critical cognitive domains – psychomotor function, attention, learning and working memory through card playing tasks,” said Dr. Paul Maruff, Chief Science Officer at Cogstate. “These study results are important as they demonstrate the sensitivity and specificity of Cognigram™. This means that Cognigram™ can be used in clinical practice settings to identify even subtle impairments that can signify the earliest stage of dementia.”

Cognitive Function in Aging
Cognition is the mental process of knowing, including aspects such as awareness, perception, reasoning, and judgment. Some decrease in cognition is expected at older ages, but the decline is not uniform across all cognitive tasks or for all individuals. Impaired cognition can have health consequences, such as first stroke, falls, and institutionalization. It may reduce an individual’s ability to communicate pain to health care providers, carry out instrumental activities of daily living, cope with chronic disease symptoms, perform self-care and adhere to medication instructions.
The number of Canadians living with cognitive impairment, including dementia, was 747,000 in 2012 and will double to 1.4 million by 2031.\(^5\) The annual economic burden is expected to increase substantially from approximately $15 billion in 2008 to $153 billion by the year 2038.\(^6\)

“The burden of dementia is growing rapidly. As a physician, I witness first-hand the profound impact of Alzheimer’s disease and related dementias on the everyday lives of patients and their families. The hardship is greater when cognitive changes are not identified early,” says Dr. Sharon Cohen, Neurologist and Medical Director of Toronto Memory Program. “New computerized assessment tools are valuable in the accurate detection of early cognitive impairment and in monitoring cognitive change over time.”

**About the Study**\(^7\)

The study included 653 healthy older adults, 68 adults with mild cognitive impairment (MCI), and 44 adults with AD who completed the Cognigram™ system. Participants were recruited from the Australian Imaging, Biomarkers, and Lifestyle (AIBL) Study of Ageing, and the AIBL-Rate of Change sub-study (AIBL-ROCS). The four performance measures of Cognigram™ were reduced to two composites – psychomotor/attention and learning/working memory. Sensitivity and specificity analyses were conducted on the two composites to determine their clinical utility. The AIBL study in which participants were recruited from, aimed to discover which biomarkers, cognitive characteristics, and health and lifestyle factors determine subsequent development of symptomatic Alzheimer’s disease.\(^8\) The AIBL study is supported by the Science and Industry Endowment Fund in Australia.\(^9\)

**About the Results**\(^10\)

Large impairments in MCI (d = 1.20) and AD (d = 2.20) were identified for the learning/working memory composite but not the psychomotor/attention composite (MCI d = 0.40; AD d = 0.50). Using a cutscore of -1.96, the learning/working memory composite showed 85.71 per cent sensitivity and 96.81 per cent specificity to a clinical classification of Alzheimer’s disease. Both composite scores showed high test-retest reliability (0.95) over four months. Performance on the memory composite was also related to performance on the MMSE, with worse scores on the MMSE associated with worse performance on the Cognigram™ memory composite.

**About Cognigram™**
Cognigram™ is a computer-based system designed to measure and monitor cognitive function for neuro-degenerative diseases such as mild cognitive impairment and Alzheimer’s disease. Merck Canada Inc. promotes Cognigram™ in Canada. Cognigram™ was created and is supplied by Cogstate Ltd. The partnership is part of the ongoing commitment from Merck to improve disease management involving the central nervous system.

About Merck
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3 Ibid.

4 Ibid.


9 Ibid.