



EMBARGOED FOR RELEASE UNTIL SUNDAY, JULY 24, 2016, 4:45 PM ET

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FROM THE ALZHEIMER'S ASSOCIATION INTERNATIONAL CONFERENCE 2016

NEW CONCEPT - MILD BEHAVIORAL IMPAIRMENT (MBI) - AND CHECKLIST OF SYMPTOMS COULD SUPPORT EARLIER ALZHEIMER'S/DEMENTIA DIAGNOSIS

- Beyond Memory Loss, Behavior Changes Are Often First Signs of Dementia -

TORONTO, July 24, 2016 – Researchers presenting at the Alzheimer's Association International Conference 2016 (AAIC 2016) in Toronto introduced and described a new condition or patient status, known as Mild Behavioral Impairment (MBI), that may be a forerunner of neurodegeneration and progression to mild cognitive impairment (MCI) or dementia.

They also proposed new MBI checklist (MBI-C) designed to be administered by physicians that looks at five categories of behavioral symptoms, and which may eventually help clinicians capture changes in behavior that signal the beginnings of neurodegeneration. Once finalized, the proposed scale may also be made into a tool for caregivers of older adults with dementia to document the nature and extent of symptoms and measure changes over time.

According to the researchers, MBI defines a syndrome of later-life acquired neuropsychiatric symptoms (NPS) that are sustained for at least six months. Symptoms displayed as part of MBI, and included on the checklist, center on five domains: apathy/drive/motivation; mood/affect/anxiety; impulse control/agitation/reward; social appropriateness; and thoughts/perception.

The checklist was developed by an expert group participating in the NPS Professional Interest Area (PIA) under the auspices of the Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART).

Note: Some common neuropsychiatric (mental/emotional disturbance related to disordered brain function) symptoms of Alzheimer's disease/dementia: Depression, Anxiety, Wandering, "Sundowning," Resistance to daily care, Physical aggression, Repetitious questioning, Sleep disturbance, Rummaging/hoarding, Social withdrawal from others & activities, Disruptive vocalizations, Demanding behavior/verbal aggression, Refusing to eat/drink/take medication.

Neuropsychiatric symptoms in dementia are associated with increased disability, cognitive decline, caregiver burden, institutionalization, death and neuropathology burden. NPS are present in about half of people with MCI, and are associated with faster conversion to dementia. Older people with normal cognition and NPS have a higher risk of progressing to MCI, suggesting that NPS are an early manifestation of neurodegeneration.

“Alzheimer’s is a deadly brain disease, and while memory loss is a hallmark of the disease, early symptoms such as anxiety, confusion and disorientation are often more common, troubling and obvious to family members,” said Maria C. Carrillo, PhD, chief science officer, Alzheimer’s Association.

“This proposed new checklist describes and helps identify a new clinical stage in the disease and has the potential to represent a paradigm shift in formal neurodegeneration testing - away from a sole focus on the memory to also encompass behavior. By looking beyond memory-related issues to closely evaluate the behavioral issues included in the checklist, physicians could reach a more efficient and accurate diagnosis, sooner,” said Carrillo.

Rating scales for NPS in dementia, especially the Neuropsychiatric Inventory (NPI), have been used to estimate MBI prevalence. However, MBI is by definition a pre-dementia syndrome in individuals who are functionally independent and younger than typical dementia patients.

Researchers proposed that a rating scale specifically designed for MBI is necessary to develop accurate prevalence estimates and as a later outcome measure of preventive therapies. At AAIC 2016, they unveiled the MBI-C. Questions were designed specifically to address a younger pre-dementia population and to emphasize that the emergence of NPS was a significant change from prior behavior, present for at least 6 months.

“We propose that the utility of the MBI-C - once it is refined and vetted by the Alzheimer’s community - is significant not only clinically, but also in research. In addition, we may be able to create or derive a version that can be provided to family members of older adults to determine the nature and extent of neuropsychiatric symptoms and to measure changes over time. From a research perspective, the scale may prove to be usable in biomarker and neuroimaging studies in pre-dementia clinical states, in epidemiological studies of community samples, and in clinical sample observational studies to help assess the impact of NPS in older adults,” said Zahinoor Ismail, MD, from the University of Calgary.

Prevalence of Mild Behavioral Impairment (MBI) in a Memory Clinic Population and the Impact on Caregiver Burden

In a second study reported at AAIC 2016, Ismail and colleagues from the University of Calgary reported the prevalence and characteristics of NPS in a memory clinic population, grouped by MBI domains.

The researchers found that NPS characterize pre-dementia clinical states, with similar frequency in subjective cognitive decline (SCD) and MCI. The prevalence of any NPS was 81.6% (n=230). For MBI domains frequencies of NPS were: (1) mood 77.8%, (2) impulse control 64.4%, (3) apathy 51.7%, (4) social appropriateness 27.8%, (5) psychosis 8.7%.

Any NPS were reported in 76.5% of SCD and 83.5% of MCI participants. There was no gender or age difference in NPS prevalence. Caregiver burden scores were significantly greater in MBI (19.1 vs. 5.4;p<.001).

“Our study suggests that MBI may be a common and clinically relevant syndrome, particularly given that NPS are associated with greater caregiver burden. However, because the NPI-Q was designed for use in a dementia population, further research is needed to develop MBI-specific questionnaires that may be more appropriate for use in younger and non-demented persons,” Ismail said.

About AAIC

The Alzheimer's Association International Conference (AAIC) is the world's largest gathering of researchers from around the world focused on Alzheimer's and other dementias. As a part of the Alzheimer's Association's research program, AAIC serves as a catalyst for generating new knowledge about dementia and fostering a vital, collegial research community.

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The Alzheimer's Association is the leading voluntary health organization in Alzheimer's care, support and research. Our mission is to eliminate Alzheimer's disease through the advancement of research, to provide and enhance care and support for all affected, and to reduce the risk of dementia through the promotion of brain health. Our vision is a world without Alzheimer's. Visit alz.org or call 800.272.3900.

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- Zahinoor Ismail, MD. The Mild Behavioral Impairment Checklist (MBI-C): A New Rating Scale for Neuropsychiatric Symptoms As Early Manifestations of Neurodegenerative Disease. (Funder: Hotchkiss Brain Institute via the Alzheimer Society Calgary)
- Zahinoor Ismail, MD. Prevalence of Mild Behavioral Impairment (MBI) in a Memory Clinic Population and the Impact on Caregiver Burden. (Funder: Hotchkiss Brain Institute via the Alzheimer Society Calgary)

Proposal ID: O1-13-03
Oral session: Sunday, July 24, 2016: 4:15-5:45 PM
Topic Selection: Neuropsychiatric Symptoms and Cognition

The Mild Behavioral Impairment Checklist (MBI-C): A New Rating Scale for Neuropsychiatric Symptoms As Early Manifestations of Neurodegenerative Disease

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Background: Neuropsychiatric symptoms (NPS) in dementia and are associated with disability, cognitive decline, caregiver burden, institutionalization, death, and greater neuropathology burden. NPS are present in about half of people with MCI, and are associated with faster conversion to dementia. Older people with normal cognition and NPS have a higher risk of progressing to MCI, suggesting that NPS are an early manifestation of neurodegeneration.

An Alzheimer's Association international expert consensus panel recently proposed that Mild Behavioral Impairment (MBI)¹, defines a syndrome of later-life acquired NPS that is a harbinger of neurodegeneration and progression to MCI and/or dementia. The NPS seen in MBI are described in the domains of apathy/drive/motivation; mood/affect/anxiety; impulse control/agitation/reward; social appropriateness; and thoughts/perception. Rating scales for NPS in dementia, especially the Neuropsychiatric Inventory (NPI), have been used to estimate MBI prevalence². However, MBI is by definition a pre-dementia syndrome in individuals who are functionally independent and younger than typical dementia patients. A rating scale specifically designed for MBI is necessary to develop accurate prevalence estimates and as a later outcome measure of preventive therapies.

Methods: We describe the development of the MBI Checklist (MBI-C) via an iterative Delphi process involving members of the NPS Professional Interest Area of the International Society to Advance Alzheimer's Research and Treatment (NPS-PIA of ISTAART). The clinician rating version of the Neuropsychiatric Inventory (NPI-C) was used as a starting point. Delphi Panel participants added and modified questions based on their clinical and research experience. Questions were designed specifically to address a younger pre-dementia population, and to emphasize that the emergence of NPS was a significant change from prior behavior, present for at least 6 months. A series of online votes resulted in ranking of items, with the lowest ranked in each of the five MBI domains dropped off the list, resulting in the final version of the scale.

Results: We present the MBI-C, divided into 5 domains, as well as subdomains, as an informant reported or clinician rated questionnaire.

Conclusions: The MBI-C is a rating based on the new ISTAART MBI research diagnostic criteria. Validation studies are underway to assess its performance.

Prevalence of Mild Behavioral Impairment (MBI) in a Memory Clinic Population and the Impact on Caregiver Burden

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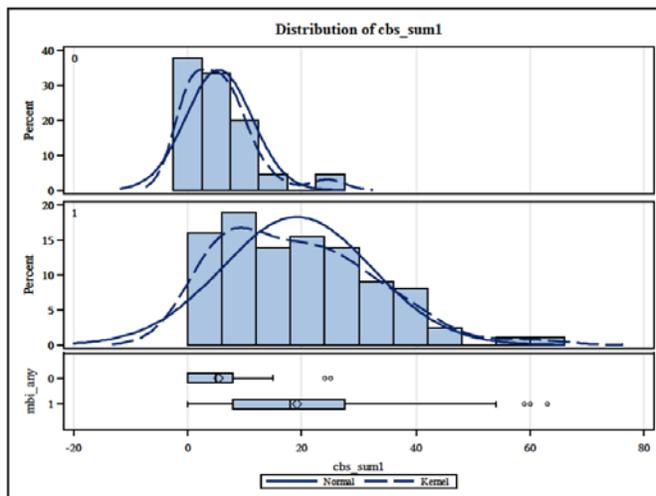
Background: Neuropsychiatric symptoms (NPS) have been associated with cognitive decline in persons with MCI or normal cognition. Recently, Mild Behavioural Impairment (MBI) has been proposed as a syndrome by an Alzheimer's Association consensus group 1, which defines later-life acquired NPS as possible harbingers of neurodegeneration. These NPS are described in the domains of apathy, mood, impulse control, social appropriateness, and psychosis. However, there are few data on the prevalence of NPS and the affected domains in symptomatic patients with MCI or subjective cognitive decline.

Methods: We report the prevalence and characteristics of NPS in a memory clinic population, grouped by MBI domains. We analyzed neuropsychiatric inventory questionnaires (NPI-Q) from 282 consecutive patients with subjective cognitive decline or MCI, recruited from 1 January 2010 to 30 September 2015. Zarit Caregiver Burden Scale (15 item) was used to determine caregiver burden (n=245, 87%). Descriptive statistics were performed to identify frequency of NPS (present or absent) by domain, with Chi square tests performed when appropriate.

Results: Mean age was 60.7 with 13.8 years of education. The prevalence of any NPS was 81.6% (n=230). For MBI domains frequencies of NPS were: 1) mood 77.8%; 2) impulse control 64.4%; 3) apathy 51.7%; 4) social appropriateness 27.8%; and 5) psychosis 8.7%. Any NPS were reported in 76.5% of SCD and 83.5% of MCI participants. There was no gender or age difference in NPS prevalence (p=.63; p=.56). Mean MoCA (23.5) and MMSE (27.8) scores in participants with NPS were not significantly different than participants without NPS (p=.25; p=.18). However, mean caregiver burden scores were significantly greater in MBI (19.1 vs. 5.4; p<.001).

Conclusions: NPS are very common in pre-dementia clinical states, with similar frequency in subjective cognitive decline and MCI. NPS were clinically relevant because they were associated with greater caregiver burden. These data suggest that MBI may be a common and clinically relevant syndrome. Because the NPI-Q was designed for use in a dementia population, new research is needed to develop MBI-specific questionnaires that may be more appropriate for use in younger and non-demented persons.

Tables and Figures:



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