DOI: 10.1017/cjn.2023.283
This is a manuscript accepted for publication in *Canadian Journal of Neurological Sciences*.
This version may be subject to change during the production process.

Can we improve care of people with mild cognitive impairment or dementia in Canada?

Serge Gauthier, C.M., C.Q., MD, FRCPC

Emeritus Professor in Neurology and Psychiatry, McGill University, Montreal, Canada

Serge.gauthier@mcgill.ca

The publication by Black et al in this issue of the *Canadian Journal of Neurological Sciences* documents the existing health system capacity constraints for the timely diagnosis of Mild Cognitive Impairment (MCI) and dementia[1] in Canada. Many of these constraints are shared with other countries, as reported in the *World Alzheimer Report 2021* of Alzheimer Disease International.[2] The majority of clinicians who answered a survey in the preparation of this Report were neurologists (32.6% out of 1,110) from 110 countries. The main difficulty they encountered in their practice for the diagnosis of dementia is the belief by many other physicians that nothing can be done and/or their lack of knowledge about diagnosis. Access to imaging facilities for structural imaging was good (79%), FDG-PET modest (37%) and amyloid PET low (24%). Many performed lumbar punctures themselves (49%) or referred to a colleague with more practical experience (26%) for amyloid and tau levels. Most (60%) felt comfortable in disclosing the diagnosis of dementia to the patient, but some (33%) to the accompanying family member only. Most were open to using new plasma biomarkers such as P-tau isoforms (64%), validated algorithms on-line to obtain a probability score on the etiology of cognitive decline (58%) and validated cognitive tests performed remotely (67%). The major challenges they foresaw in the diagnosis of dementia are the growing needs due to population ageing and availability of new disease modifying therapies (DMT).

Since the publication of the *World Alzheimer Report 2021*, there has been further work to establish the clinical utility of blood biomarkers such as P-tau 181 and 217 in the workup of persons with cognitive complaints, and there will be soon a critical mass of peer-reviewed publications to write clinical use guidelines for their use in primary care setting

and in specialty practice. I expect academic groups such as the one publishing the current article, and the leaders of the Canadian Consensus Conference on the Diagnosis and Treatment of Dementia (CCCDTD)[3] to take on that task within a year.

The other critical event is the regulatory approval by the United States Food and Drug Administration of two drugs for use in the MCI stage of Alzheimer's disease (AD). Whether you believe or not in amyloid β42 deposition as a cause of AD, or in the effect size demonstrated in 18 months studies comparing lecanemab[4] and donanemab[5] to placebo, there is now a clinical need to make an accurate diagnosis of MCI using biological criteria. This is what patients expect and deserve, so that they can plan their life accordingly. Furthermore the treatment of comorbidities at the MCI stage and the control of modifiable risk factors is likely to have a public health impact even larger than the availability of the current generation of DMT. So it is our responsibility to keep abreast of the biological definition of AD proposed by the NIA-AA in 2018[6] which is being updated right now and open for feedback (alz.org/nia-aa). As clinicians we must be ready to help persons with cognitive complaints to get an accurate clinical diagnosis of minor or major neurocognitive disorder, and use biomarkers relevant to the case, including brain metabolic imaging, spinal fluid examination and very soon blood biomarkers.

I thank the editorial team of the Canadian Journal of Neurological Sciences for accepting the publication of an article relevant to the diagnosis and care of people living with MCI and dementia. More to come about possible solutions towards more structured approaches in our country's health care systems.

Serge Gauthier

August 19, 2023

https://doi.org/10.1017/cjn.2023.283 Published online by Cambridge University Press

References

[1]Black SE, Budd N, Nygaard HB et al. Healthcare capacity for treatment of Alzheimer's disease in Canada. Ca*n J Neurol Sci*. 2023; XXXX DOI: XXXXX

[2]Gauthier S, Rosa-Neto P. Morais J, Webster C. World Alzheimer Report 2021: Journey through the diagnosis of dementia. London, England. Alzheimer's Disease International; 2021.

[3]Ismail Z, Black SE, Camicioli R et al. Recommendations of the 5th Canadian Consensus Conference on the Diagnosis and Treatment of Dementia. *Alzheimers Dement*. 2020; 16:1182-1195. DOI : 10.1002/alz.12105

[4]Van Dyck CH, Swanson CJ, Aisen P et al. Lecanemab in early Alzheimer's disease. *N Engl J Med* 2023; 388: 9-21. DOI: 10.1056/NEJMoa2212948

[5]Sims JR, Zimmer JA, Evans CD et al. Donanemab in early symptomatic Alzheimer disease. The TRAILBLAZER-ALZ 2 Randomized Clinical Trial. *JAMA* 2023; 330: 512-527. DOI: 10.1001/jama.2023.13239.

[6]Jack CR, Bennett DA, Blennow K et al. NIA-AA Research Framework: towards a biological definition of Alzheimer's disease. *Alzheimers Dement* 2018: 14: 535-562. DOI: 10.1016/j.alz.2018.02.018

https://doi.org/10.1017/cjn.2023.283 Published online by Cambridge University Press