Potential contribution of diabetes mellitus to orthostatic blood pressure fall and conversion of mild cognitive impairment to dementia

Sevilay Muratli¹
Fatih Tufan¹
Ozlem Soyuk²
Gulistan Bahat¹
Mehmet Akif Karan¹

¹Department of Geriatrics,

²Department of Endocrinology,
Istanbul Faculty of Medicine, Istanbul
University, Istanbul, Turkey

Dear editor

We read the article “Orthostatic blood pressure in people with mild cognitive impairment predicts conversion to dementia” by Hayakawa et al¹ with interest. It is well-known that many individuals with mild cognitive impairment (MCI) progress to dementia.² However, we do not exactly know which risk factors increase this risk and to what extent. Hypertension is a risk factor for Alzheimer’s disease and vascular dementia. However, the findings of this study make us consider hypotension as a new risk factor for dementia. Furthermore, a recently published 6-year prospective general population cohort study suggested that not only orthostatic hypotension (OH), but also symptoms of OH seemed to be risk factors for cognitive decline.³ Notably, in the study by Elmstahl et al³, hypertension and diabetes mellitus (DM) were more common in subjects with dementia. We would like to make some comments on this well-designed study.

The prevalence of DM is rather high in elderly individuals, and diabetic autonomic neuropathy may cause significant autonomic dysfunction. Furthermore, reactive hypoglycemic attacks and glucose variability may also increase the risk of Alzheimer’s disease in subjects with DM.^{4–6} Glucose variability and hypoglycemic attacks precipitated by insulin resistance may also affect conversion of MCI to dementia.⁷ Accurate diagnosis of DM is especially important in older adults who may not experience typical symptoms of hyperglycemia and may even have normal fasting blood glucose levels. Thus, the diagnosis of DM may be easily overlooked in elderly subjects.⁸ However, in the study by Hayakawa et al¹, a detailed assessment for the presence or absence of DM is not reported and the rate of DM in the study population seems to be lower than anticipated. We suggest that for an accurate diagnosis of DM, checking fasting glucose, postprandial glucose, and HbA_{1c} levels is essential.⁸ In conclusion, undiagnosed DM, glucose variability, and postprandial hypoglycemia might have contributed significantly to OH and to conversion of MCI to dementia in this study.

Disclosure

The authors report no conflicts of interest in this communication.

References

1. Hayakawa T, McGarrigle CA, Coen RF, et al. Orthostatic blood pressure behavior in people with mild cognitive impairment predicts conversion to dementia. *J Am Geriatr Soc*. 2015;63(9):1868–1873.
2. Arevalo-Rodriguez I, Smailagic N, Roque IFM, et al. Mini-Mental State Examination (MMSE) for the detection of Alzheimer’s disease and other dementias in people with mild cognitive impairment (MCI). *Cochrane Database Syst Rev*. 2015;3:CD010783.

Correspondence: Fatih Tufan
Department of Geriatrics, Istanbul
Faculty of Medicine, Istanbul University,
PO Box 34093, Sehremini, Fatih,
Istanbul, Turkey
Tel +90 212 414 1500
Fax +90 212 414 2022
Email fatihtufan@gmail.com

3. Elmstahl S, Widerstrom E. Orthostatic intolerance predicts mild cognitive impairment: incidence of mild cognitive impairment and dementia from the Swedish general population cohort Good Aging in Skåne. *Clin Interv Aging*. 2014;9:1993–2002.
4. Willette AA, Bendlin BB, Starks EJ, et al. Association of insulin resistance with cerebral glucose uptake in late middle-aged adults at risk for Alzheimer disease. *JAMA Neurol*. 2015;72(9):1013–1020.
5. Yaffe K, Falvey CM, Hamilton N, et al. Association between hypoglycemia and dementia in a biracial cohort of older adults with diabetes mellitus. *JAMA Intern Med*. 2013;173(14):1300–1306.
6. Kim C, Sohn JH, Jang MU, et al. Association between visit-to-visit glucose variability and cognitive function in aged type 2 diabetic patients: a cross-sectional study. *PLoS One*. 2015;10(7):e0132118.
7. Zhong Y, Zhang XY, Miao Y, et al. The relationship between glucose excursion and cognitive function in aged type 2 diabetes patients. *Biomed Environ Sci*. 2012;25(1):1–7.
8. Kirkman MS, Briscoe VJ, Clark N, et al. Diabetes in older adults. *Diabetes Care*. 2012;35(12):2650–2664.

Dove Medical Press encourages responsible, free and frank academic debate. The content of the Clinical Interventions in Aging 'letters to the editor' section does not necessarily represent the views of Dove Medical Press, its officers, agents, employees, related entities or the Clinical Interventions in Aging editors. While all reasonable steps have been taken to confirm the content of each letter, Dove Medical Press accepts no liability in respect of the content of any letter, nor is it responsible for the content and accuracy of any letter to the editor.

Clinical Interventions in Aging

Publish your work in this journal

Clinical Interventions in Aging is an international, peer-reviewed journal focusing on evidence-based reports on the value or lack thereof of treatments intended to prevent or delay the onset of maladaptive correlates of aging in human beings. This journal is indexed on PubMed Central, MedLine,

CAS, Scopus and the Elsevier Bibliographic databases. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <http://www.dovepress.com/clinical-interventions-in-aging-journal>

Dovepress