MCI in Gothenburg and beyond

Wallin A

The need for skill development throughout life due to rapid technological development and global competition has led to increased demands on well-preserved mental functions. Cognition is the core feature of mental functioning referring to ability to learn, think and process information in the brain and to interact with the surrounding. The challenges of today’s society calls for more knowledge about how to maintain all aspects of cognitive health, such as speed/attention, memory/learning, visuospatial ability, language, executive (goal-oriented) capacity and social cognition during all phases of the life course. Disability due to cognitive failure among the workforce has become a major challenge for many workplaces. Recent studies indicate that negative lifestyle factors contribute substantially to the development of cognitive impairment; however, we have neither implemented efficient intervention and prevention strategies, nor disseminated knowledge on how to counteract the impact of these negative lifestyle changes. Medical advances have improved treatments for numerous diseases; however the cognitive implications of various diseases have not been sufficiently addressed. Disability induced by cognitive dysfunction has become a major issue also in other groups of patients than in Alzheimer’s disease (AD) and related disorders.

The Gothenburg MCI study is a longitudinal clinical-observational study on the Alzheimer’s disease (AD) - subcortical vascular disease (SVD) spectrum, among patients seeking medical counseling at a memory clinic. Particular focus is on SVD, which is an under-recognized disorder in clinical practice and research. Using specific criteria for SVD, and criteria in agreement with recently published clinical criteria for AD, not only AD but also SVD has been identified. Of 664 patients enrolled between 2000 and 2013, 195 where diagnosed with subjective cognitive impairment (SCI), 274 with mild cognitive impairment (MCI), and 195 with dementia, at baseline. Of the 195 (29%) patients with dementia at baseline, 81 (42%) had AD, 27 (14%) SVD, 41 (21%) mixed type dementia (=AD+SVD=MixD), and 46 (23%) other etiologies. After 6 years, 292 SCI/MCI patients were eligible for follow-up. Of these 292, 69 (24%) had converted to dementia [29 (42%) AD, 16 (23%) SVD, 15 (22%) MixD, 9 (13%) other etiologies]. Furthermore, we have found characteristic neuropsychological and neurochemical patterns for MixD/SVD, which are different from those of AD, also early in the course of the disease. Our findings demonstrates that it is possible to identify not only AD but also SVD in a memory clinic setting. Although the results need to be replicated they should already now be taken into account in the design of clinical trials and clinical practice.

In addition, since cognitive changes may appear in various medical, living and working conditions throughout the life course, there is a need of a broader approach to cognition-related fragility and disability than is represented by the aging and dementia perspective. The Center of Cognitive Medicine Initiative in Gothenburg is such an attempt.