World Stroke Day Proclamation 2015
Call to Preserve Cognitive Vitality

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World Stroke Day is an opportunity to proclaim a compelling universal message about stroke. Previous proclamations have emphasized challenges and opportunities to treat, rehabilitate, and prevent stroke (2006), the importance of small strokes (2008), and a prioritized world stroke agenda (2010). On the occasion of World Stroke Day 2015, an esteemed group of international stroke experts focus our attention on joining forces to prevent stroke and potentially preventable dementias.

Key tenets of the 2015 proclamation include the following: (1) stroke and some dementias may be prevented; (2) shared risks (eg, tobacco use, physical inactivity, and poor diet) account for leading world health problems including major dementias of later life; (3) prevention has been neglected or not optimally applied; (4) poststroke dementia should be an integral part of stroke care; (5) major dementias commonly have a vascular component and detection and management of vascular risks should be encouraged; (6) organized stroke and dementia care and rehabilitation can improve outcomes; and (7) the need to better support and inform patients with stroke and caregivers, and a call to engage the public to increase knowledge that stroke and some dementias may be preventable.

Why is this year’s proclamation about stroke and the potentially preventable dementias so timely and important? For many years, the scientific community has been fixed on Alzheimer disease (AD), and vascular cognitive disorders have received less emphasis. There is no doubt that AD is extremely important to our understanding of late-life cognitive impairment. However, despite the recognition in the late 1990s and early 2000s that AD and vascular cognitive disorders may have shared cardiovascular risks, the scientific community was slow to embrace the relationship. Furthermore, many past cardiovascular risk reduction trials did not include comprehensive study of cognitive function, and only more recently have these trials incorporated cognitive metrics as a key outcome. Thus, missed opportunities to study cognitive function in patients with a high burden of vascular risks have been common.

Given this history, one may wonder: Is there cause for future optimism by focusing on the linkage of vascular risks to major dementias of later life and their prevention? The answer is yes. Despite a National Institutes of Health State-of-the-Science Conference statement in 2010 on the prevention of AD and cognitive decline concluded that there was no association of even moderate evidence that a modifiable risk reduced the incidence of AD or was there a therapeutic intervention, major breakthroughs have subsequently occurred. For example, population and cross-sectional studies from Europe and the United States have shown a decline in dementia and cognitive impairment over time, possibly explained at least in part by reduction of vascular risks and the influence of higher education. Furthermore, the AD research community recognizes the importance of elucidation of vascular mechanisms that contribute to dementias and acknowledges cerebrovascular disease as a common neuropathological finding in older patients with dementia. It is estimated that the population attributable risk of lifestyle and cardiovascular factors for AD is >50%, suggesting that approximately half of AD is attributable to these risks, and therefore, a substantial number of AD cases may be prevented by prevention or control of these factors.

In addition, the Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability (FINGER) provides additional positive evidence. This large-scale randomized trial assessed a multidomain intervention to improve or maintain cognitive vitality in at-risk elderly patients in the general population. A 2-year intervention of diet, exercise, cognitive training, and vascular risk monitoring was compared with general health advice. There were significant intervention effects on overall cognition, executive function and processing speed, and lifestyle habits although there was no significant effect on memory. A longer-term follow-up study over 7 years is planned to assess intervention effects on incident dementias and related functional outcomes. Finally, a recently published Institute of Medicine report on understanding progress and opportunities for action in cognitive aging lists being physically active and reduction and management of cardiovascular risks as steps to maintain cognitive vitality.

We know that both clinically manifest strokes and small silent strokes are harbingers of future stroke, cognitive impairment, and mortality. There are many scientific questions, however, that need to be answered to better understand complex preclinical and clinical circumstances underlying vascular and nonvascular mechanisms related to cognitive impairment of later life. There are many factors to further elucidate, such as molecular and cellular mechanisms, which underlie vascular disease in AD and dementia, the role of innate and adaptive immunity and inflammation, the role of the blood brain barrier and blood flow alterations, and many others. Vascular processes leading
to cognitive impairment are present across a time continuum. Thus, it will be important to capture vascular mechanisms at work across a real-time continuum and with valid biomarkers to better clarify potential intervention touch points before the underlying neuropathologic processes become too far advanced and are irreversible.4 This may mean that long-term multidisciplinary clinical study is required beginning in midlife or earlier.

The contributors to World Stroke Day Proclamation 2015 share an important message: we need to join forces to prevent stroke and potentially preventable dementias.3 Given a renewed momentum in relation to the importance of vascular risks on cognitive function, establishment of funded centers of excellence for the study of vascular brain injury and vascular contributions to cognitive vitality with transdisciplinary, translational, and transactional links within and between centers is a timely and logical next step.4,20

Disclosures

Dr Gorelick’s employer receives fees for consulting work that Dr Gorelick performs for Novartis on a novel blood pressure lowering drug for preservation of cognition.

References


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