World Stroke Day Proclamation 2015
Call to Preserve Cognitive Vitality

Philip B. Gorelick, MD, MPH

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.

The opinions expressed in this article are not necessarily those of the editors or of the American Heart Association.

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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.420

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References

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