Controlling vascular disease may be key to reducing prevalence of Alzheimer's disease

November 5 2012

Over the last 15 years, researchers have found a significant association between vascular diseases such as hypertension, atherosclerosis, diabetes type 2, hyperlipidemia, and heart disease and an increased risk of Alzheimer's disease. In a special issue of the *Journal of Alzheimer's Disease*, leading experts provide a comprehensive overview of the pathological, biochemical, and physiological processes that contribute to Alzheimer's disease risk and ways that may delay or reverse these age-related abnormalities.

"Vascular risk factors to Alzheimer's disease offer the possibility of markedly reducing incident dementia by early identification and appropriate medical management of these likely precursors of cognitive deterioration and dementia," says Guest Editor Jack C. de la Torre, MD, PhD, of the University of Texas, Austin. "Improved understanding coupled with preventive strategies could be a monumental step forward in reducing worldwide prevalence of Alzheimer's disease, which is doubling every 20 years."

The issue explores how vascular disease can affect cerebral blood flow and impair signaling, contributing to Alzheimer's disease (AD). The diagnostics of cardiovascular risk factors in AD are addressed, as are potential therapeutic approaches.

Paradoxically, the presence of vascular risk factors in middle age is associated with the development of AD more strongly than late-life vascular disease. In fact, some research suggests that vascular symptoms

later in life may have a protective effect against the development of the disease. The physiopathological mechanisms that may underlie this phenomenon are discussed.

To date, trials that target major [cardiovascular risk factors](link) in the prevention of AD remain inconclusive but have become an important focus of international research as described by contributors of this special volume in their overviews. The multifactorial nature of AD and the need to identify the proper time window for intervention when designing possible interventions, and methodological issues that will have to be addressed to achieve an optimal design of new randomized controlled trials, are discussed. Promising avenues for treatment, such as the potential of low-level light therapy to increase the rate of oxygen consumption in the brain and enhance cortical metabolic capacity, and the possibility that some antihypertensive drug classes reduce the risk and progression of AD more than others, are discussed.

Dr. de la Torre notes that the presence of vascular risk factors is not an absolute pathway to dementia, and it may be as important to study how or why individuals who are cognitively normal but have vascular risk are able to avoid dementia. "Reducing Alzheimer's disease prevalence by focusing right now on [vascular risk factors](link) to Alzheimer's disease, even with our limited technology, is not a simple or easy task. But the task must begin somewhere and without delay because time is running out for millions of people whose destiny with dementia may start sooner rather than later," he concludes.

More information: "Physiopathology of Vascular Risk Factors in Alzheimer's Disease," Guest Edited by Jack C. de la Torre. Journal of Alzheimer's Disease, Volume 32, Issue 3 (October 2012).