

Special Issue on

## Visit-to-Visit Blood Pressure Variability, Cardiovascular Disease, and Alzheimer's Disease: What is the Underlying Pathophysiology?

# CALL FOR PAPERS

Vascular disease of the brain is a major cause of death and disability. Hypertension is the most potent risk factor for cardiovascular disease, including stroke and coronary artery disease.

Blood pressure (BP) fluctuates around average values over both the short and long terms. Its fluctuation is suggested to be caused by a complex interaction between external environmental stimuli and the response of cardiovascular control mechanisms. Diurnal and minute-to-minute BP variability through 24 h ambulatory BP monitoring have both been recognized as important cardiovascular risk markers. Aside from short-term BP variability, a substantial variation in BP exists when a subject is observed over months with repeated clinical visits.

Up to now, visit-to-visit BP variability had been mostly dismissed as “background noise” that dilutes the prognostic effects of average BP measurement or as the so-called “regression dilution bias” which must be neutralized by appropriate statistical techniques in order to appreciate the “true” associations with the usual BP measurement in patients with disease. The demonstration that visit-to-visit BP variability carries independent prognostic information for stroke has the potential of modifying our current understanding of the importance of BP. In addition, visit-to-visit BP variability has been shown to increase with the number of visits and to have high reproducibility. It is thus apparent that the relationship between visit-to-visit BP variability and cardiocerebrovascular disease could have clinical relevance.

While hypertension is known to be associated with vascular dementia, several studies have also demonstrated the relationship of hypertension with Alzheimer's disease. In fact, since Alois Alzheimer first described Alzheimer's disease in 1906, white matter lesions have become well known to pathologists. However, it could not be established whether these cerebrovascular alterations were a cause or a consequence of the neurodegenerative process. Although several studies have shown that visit-to-visit BP variability had a relationship with cognitive impairment, independent associations of visit-to-visit BP variability have been observed with dementia. Cerebral small vessel disease was suggested to have a pivotal role in the pathophysiology of dementia. However, the impact of visit-to-visit BP variability on Alzheimer's disease has received less attention. It is hypothesized that higher visit-to-visit BP variability is an upstream risk factor of arterial stiffness and Alzheimer's disease and that arterial stiffness mediates the relationship between higher visit-to-visit BP variability and Alzheimer's disease.

We would like to summarize the current progress on the insight into the relationship between visit-to-visit BP variability, cardiovascular disease, and cognitive impairment including Alzheimer's disease and invite investigators to contribute high original research as well as review manuscripts to the upcoming special issue.

Potential topics include but are not limited to the following:

- ▶ Visit-to-visit blood pressure variability and cardiovascular disease (stroke, coronary heart disease, heart failure, and kidney disease)
- ▶ Pathophysiology of visit-to-visit blood pressure variability (atherosclerosis, arteriosclerosis, and sympathetic nervous system)
- ▶ Visit-to-visit blood pressure variability and sleep (sleep duration, sleep disorder, and sleep-disordered breathing)
- ▶ Visit-to-visit blood pressure variability and cognitive impairment (Alzheimer's disease)
- ▶ Visit-to-visit blood pressure variability and class of antihypertensive agents

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/ijhy/vvpv/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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