

## ***Ipsa Scientia Potestas Est: Regional Epidemiological Studies Lead to Regional Strategies for Stroke Prevention***

Stroke is the fifth leading cause of death in the Western countries,<sup>[1]</sup> however, both prevalence and mortality have declined in the past 20 years.<sup>[1,2]</sup> This is attributed to a more optimum utilization of antihypertensives, statins, and antiplatelets that have targeted the associated risk factors in the Western populations.<sup>[2]</sup> Therefore, the success in decreasing stroke incidence is a consequence of recognition of the stroke risk factors.

Recent studies have shown the stroke incidence in Asian and South Asian populations is growing.<sup>[3,4]</sup> We have already learned from epidemiological studies in the Asian population that the prevalence of atherosclerotic disease in stroke patients is different from the Western population.<sup>[5,6]</sup> This prioritizes certain screening tests and preventive measures in Asian population to address the risk factors of atherosclerotic diseases. The sparsity of epidemiological data on stroke subtypes and associated risk factors in developing countries<sup>[4,7]</sup> will make it difficult to devise region-specific recommendations for stroke prevention. The more limited resources in South Asian and Middle Eastern countries further highlights the importance of more regional studies to optimize provision of targeted treatments for primary and secondary stroke prevention in those countries. Therefore, stroke epidemiological studies on South Asian populations are a prerequisite to reducing stroke incidence and severity.

The paper entitled “Frequency of ischemic stroke subtypes based on TOAST classification at a tertiary care center in Pakistan” has addressed the above-mentioned need and has categorized stroke subtypes in a cross-sectional study of incoming stroke patients in a hospital in Pakistan. Authors have also evaluated the rate of risk factors in stroke patients. They have discovered a pattern of stroke that in part resembles the stroke in the well-studied Western population: cardioembolism, cryptogenic stroke, and small vessel disease are the stroke subtypes in the order of prevalence. Although their reported rate of unspecified stroke etiologies is comparable to non-Hispanic whites in Western countries,<sup>[8]</sup> it is worth mentioning that the rate of cryptogenic stroke is influenced by efficiency of neuroimaging techniques to discover underlying atherosclerotic disease. In addition,

they have recognized the prevalence of high blood pressure, diabetes, heart failure and valvular disease, followed by smoking, dyslipidemia, ischemic heart disease, atrial fibrillation, and hypercoagulable state in stroke patients.

The cross-sectional design of the study, however, limits drawing a more causal relation as they have only studied the prevalence of risk factors in stroke patients and have not included a matched control. In addition, as authors have pointed out, private hospitals tend to have patients with a higher socioeconomic status, and therefore, their study population may not be representative. In fact, one interpretation to have cardioembolism as the leading stroke subtype could be the possibility that the people of higher socioeconomic status could have better-controlled atherosclerosis risk factors due to their superior access to preventive medical care, and therefore, they will have a higher share of stroke caused by non-atherosclerotic causes, mainly cardioembolism. This ambiguity could be solved as future studies include larger cohorts with a matched control population.

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