Stroke has been a leading cause of disability and death worldwide. A decrease in stroke mortality over the past few decades has resulted in a significant increase in the absolute number of stroke survivors globally, and thus, prevention of recurrent stroke has become increasingly important. Notably, advances in adoption of guideline-recommended secondary prevention measures against vascular risk factors have been associated with a dramatic decrease in stroke recurrence in Western countries (eg, 12-month stroke recurrence rates in the UK decreased from 8.1% in 1995 to 4.1% in 2005). However, current trends in stroke recurrence in many countries, particularly those that are not as developed, largely remain unclear.

Using the China National Stroke Registries (CNSRs) for 2007 to 2008 (CNSR I) and 2015 to 2018 (CNSR III), Xu and colleagues systematically assessed changes in the rate of stroke recurrence in a Chinese population and found that cumulative incidence of recurrent stroke within 12 months decreased from 15.5% to 12.5% over 10 years. Interestingly, this outcome was accompanied by the finding that use of secondary preventive medications increased markedly in the past decade in China.

Of note, despite improvements in evidence-based use of secondary prevention measures, 12.5% of individuals in the country with strokes had recurrences within 12 months. Based on this finding, the authors hypothesized that there may have been suboptimal control of traditional risk factors or lack of awareness and management of potential new risk factors. To test the hypothesis, Xu and colleagues assessed the risk factor patterns for recurrent stroke by comparing data from CNSR III with those from CNSR I. They found that over the course of 10 years, age, prior stroke, coronary heart disease, higher National Institutes of Health Stroke Scale score, and higher low-density lipoprotein cholesterol (LDL-C) levels remained risk factors associated with stroke recurrence.

Given that the authors correctly pointed out that a lack of novel blood markers (such as inflammatory biomarkers and rheumatoid factors) and collider bias should be considered when interpreting their data and generalizing the findings, future investigations of the issue may benefit from inclusion and further optimization of more epidemiologically relevant factors. For example, by comparing age- and sex-standardized rates of stroke recurrence, it may be possible to more accurately assess differences between patient groups. In addition, a meta-analysis of 147 randomized clinical trials found that a decrease of 10 mm Hg in systolic blood pressure or 5 mm Hg in diastolic blood pressure was associated with a 41% lower risk of stroke. Given this finding, adjustment for use of antihypertensive therapy, as well as anticoagulant and hypoglycemic medications, may help better assess the association of secondary prevention measures with risk of stroke recurrence. Moreover, increasing evidence suggest that other lipid markers may be therapeutic targets as well. This suggests that research including more lipid markers in addition to LDL-C, the primary lipid marker recommended by expert consensus guidelines for estimating risk of stroke recurrence, may also be of certain value for developing better prevention strategies against stroke recurrence.

China, as well as other countries in similar socioeconomic development stages, faces a prominently increasing challenge of stroke-associated health issues compared with the rest of the world. According to results from the Global Burden of Disease Study 2019, there were 3.94 million new incidences of stroke in China in 2019, with an 86% increase in incidence rate compared with that in 1990. Controlling risk factors and continued investment in secondary prevention were considered to be key factors associated with the decrease in the burden of stroke in the United States in the last century. Over the past 2 decades, governments have implemented numerous public education and
prevention measures to improve awareness and control of risk factors associated with stroke in China, and this has been associated with increases in awareness and control rates of hypertension by 16.3% and 7.7%, respectively, from 2002 to 2012.6 However, the absolute number of stroke survivors in China is increasing rapidly, and therefore the study by Xu et al2 based on objective data derived from comparable populations is significant and may shed light on an understudied health problem.

While promising improvements have been made and the rate of stroke recurrence has decreased over the last 10 years in China, it is still notably higher than that in Western countries.1,7 Future work built on the study by Xu et al2 may be able to elaborate how much the implementation and practice of recommended secondary prevention measures contributed to the decrease in stroke recurrence. This may be enlightening concerning what other preventive strategies should be taken to further reduce the stroke recurrence rate. A better understanding of the effectiveness of currently exercised secondary prevention measures and factor patterns associated with risk of stroke recurrence may have outcomes in population health worldwide.

ARTICLE INFORMATION
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