

Increased strokes linked with China's economic prosperity

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A side effect of economic prosperity may be an increased risk of the most common type of strokes, researchers from China report in *Stroke: Journal of the American Heart Association*.

And this finding should be regarded as “an opportunity for health policy leaders to react” according to an accompanying editorial.

In the study, the rate of blood clot-caused (ischemic) strokes in China increased by almost 9 percent per year between 1984 and 2004. However, despite an overall increase in the stroke rate, the risk of dying from a stroke decreased.

The changes in the stroke rate and stroke mortality occurred during a time of rapid economic development and growth in China that greatly changed people’s lifestyles and healthcare, said Dong Zhao, M.D., Ph.D., lead author of the study.

“The changes in patterns of stroke have raised new challenges and the need to adjust priorities to prevent stroke in China,” said Zhao, director and professor of the Department of Epidemiology, Capital Medical University-affiliated Beijing Anzhen Hospital, Beijing Institute of Heart, Lung, and Blood Vessel Diseases. Zhao is also chair of the Council of Epidemiology and Prevention for the World Heart Federation.

The challenges include better control of stroke risk factors, such as high blood pressure, high cholesterol, diabetes and obesity. Because fewer

people are dying of stroke, the need to prevent recurrent strokes in survivors is growing. In addition, the need for rehabilitation services for stroke survivors also is rising.

Previous population-based research suggested an association between poverty and certain stroke characteristics: more bleeding strokes, stroke onset at younger ages, more fatal strokes and more deaths from stroke than from heart disease. The previous studies provided pieces of evidence about stroke rates, stroke-related deaths and trends in stroke in a country or region.

“No previous data provided prospective and long-term trends of the incidence of stroke and case fatality rate in one large population of a developing country as evidence of the epidemiological transition of stroke,” said Zhao.

Researchers analyzed data from the Sino-MONICA (Monitoring Trends and Determinants in Cardiovascular Disease) Project – Beijing, which tracked incidence and mortality rates of stroke and heart events in Beijing from 1984-2004. The analysis adjusted for aging population increases in Beijing during this time. The analysis revealed 14,585 strokes in people 25 to 74 years old.

During the study, the rate of ischemic strokes increased by 8.7 percent per year and the rate of bleeding strokes decreased by 1.7 percent per year. The rate of decline in bleeding strokes accelerated to 3.2 percent during the second decade of follow-up, paralleling the growing momentum of the Chinese economy. Increased access to healthcare and improved blood pressure control are the most likely explanations for the decrease in hemorrhagic strokes, Zhao said.

In contrast, the rate of change in ischemic strokes was similar in both decades. The total stroke rate (including bleeding and ischemic)

increased by 6.7 percent per year during the total study period.

The analysis also showed that people started having strokes at an older age between 1984 and 2004. The average age of stroke patients was delayed by 2.7 years among men and by 3.6 years in women. Although older age is a risk factor for stroke, that did not account for the increased stroke rate in the study, and the analysis was adjusted to account for age, said Zhao.

Even though stroke became more frequent, fewer people died of stroke during the 21 years.

The fatality rate for bleeding strokes decreased by 1.7 percent and by 0.5 percent for ischemic strokes. The rate of decline was greater during the second decade of follow-up.

Zhao noted that the rate of smoking, a major stroke risk factor, changed very little during the two decade span. But the same cannot be said of other risk factors, such as obesity and high cholesterol. In particular, consumption of fat and cholesterol increased during the study period. Total fat intake in the study area increased from 88.1g/day in 1983 to 97.4g/day in 2002. Average blood cholesterol levels increased by 24 percent from 1984 to 1999, which explained 77 percent of the increase in ischemic heart disease deaths in the same population, according to the study.

In addition, the prevalence rate of diabetes increased by 97 percent from 1994 to 2002 and the number of obese people in China increased by 13 percent in urban areas and by 85 percent in rural areas. These factors may have contributed to the transition in stroke rate and mortality.

The increased frequency of treatable risk factors indicates that “risk factors have become a new problem and challenge for public health in

China,” Zhao said. Lack of access to health care services, particularly in rural areas, remains an “important barrier to treatment of risk factors for stroke in China.”

The editorial, by Thomas Truelsen, M.D., Ph.D. and Ruth Bonita, Ph.D. M.P.H., noted that “it is possible that the effects of today’s prevalence of risk factors in the Chinese population will reach many years into the future, not only with respect to stroke, but also ischemic heart disease. Early prevention through legislation and active public health policy could reduce the potential harmful effects of an improved economy.”

Source: American Heart Association

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