

Stroke prevention and treatment series

PART 3: PREVENTION

The term 'cerebrovascular accident' has largely disappeared because stroke is not an accident — there is always an underlying disease process which, if recognized early enough and avoided or controlled, can delay or even prevent the onset of stroke.¹ A healthy lifestyle — tobacco avoidance, physical activity, diet — coupled with proactive control of risk factors including hypertension, cholesterol, diabetes and heart disease, comprise the best stroke prevention strategy. Treatment of hypertension alone, which can cause both haemorrhagic and ischaemic stroke, can reduce the risk of a stroke by up to 40% according to WHO estimates.

The view that best practices in prevention have not translated into collective action nor implementation of practice guidelines spurred formation of the Action Group on Stroke as a Catastrophic Disease. The Action Group attributes this disparity to lack of awareness, poor coordination, blatant ignorance and miscommunication, citing a 10–20% rate of controlled hypertension in the European Union, for example. While it is recognized that stroke is more catastrophic in countries with less well-developed social and medical networks, the modifiable risk factors of tobacco use, elevated blood pressure and poor diet account for over 60% of stroke mortality worldwide. The widespread myth that stroke is a disease of older, affluent people must be eradicated.

Success Story: France

The WHO's stroke prevalence data for the 8 countries surveyed by the Action Group suggest that France

has achieved the best balance between prevention and treatment (Table), enjoying the lowest rate of stroke and best treatment response. A leading health website in France, Doctissimo (<http://www.doctissimo.fr/html/sante/sante.htm>), reports that risk factors such as atherosclerosis, diabetes, hyperlipidaemia, cardiac rhythm disorder, hypertension and smoking addiction are present in 85% of vascular accident victims there. A 2004 Public Health Law outlining public policy health objectives included one intention to achieve a “decrease in the frequency and severity of disabilities associated with stroke”, which was followed by the publication of a set of related recommendations from the National Medical Academy.

Perhaps it is not surprising then that prevention is a key part of the 2002 French National Plan to fight the leading causes of cardiovascular diseases. This plan features multiple programmes aimed at all ages that target specific risk factors for stroke (e.g. smoking,

TABLE. WHO death and DALY rates for stroke.

	Stroke Deaths per 100,000 (year 2002)	DALYs per 100,000	Age-adjusted DALYs per 100,000	Age-adjusted Stroke Death Rate
Brazil	73.3	835	927	111.5
France	62.2	433	271	28.2
Germany	96.3	623	338	42.3
Italy	120.0	671	335	47.1
Japan	105.0	877	493	45.0
Poland	111.4	874	598	78.0
UK	100.4	619	359	43.7
USA	56.3	504	361	31.9

DALY (disability-adjusted life years) is a sum of years of life lost due to premature mortality and disability in the population.

nutrition) and prioritizes the challenge of uncontrolled blood pressure — a main cause of stroke. Anti-tobacco legislation including a widespread ban on advertising, a national website on how to quit smoking, and a stroke prevention campaign directed at physicians and patients are some of the tools used to raise public awareness.

Trends in Local Risk Factors

A random telephone survey of Hong Kong Chinese in 1999 indicated that most respondents were aware of the preventable nature of stroke, and that the public's major sources of knowledge about stroke were friends and relatives, newspapers and magazines, and the mass media.⁴ Nearly a decade on and in spite of the government's ban on smoking in public places, Hong Kong is consuming 12 million more cigarettes a month. Prevalence of hypertension in 1997 was 10% and, while recent epidemiological data are lacking, it has been estimated that the current rate is in the range of 25–30%.⁵

The 5-year 'Better Health for Better Hong Kong' health promotion campaign, which recruited nearly 5,000 Chinese people from the general working class in 2000, revealed that nearly a third of participants had two or more cardiovascular risk factors (hypertension, smoking status, hypercholesterolaemia, diabetes, past history of cardiovascular disease).⁶ However, most (83.1%) participants perceived their health status to be satisfactory in spite of the high prevalence of risk factors. The authors suggested that massive public education would be essential to reducing the impact of a looming epidemic of life-threatening diseases.

Proactive Prevention with Statins

In January 2008, a comprehensive meta-analysis of studies encompassing the over 120,000 patients who

have participated in randomized trials evaluating statins for stroke prevention was published.⁷ The conclusion: statins effectively reduce the risk of all-cause death and of non-haemorrhagic stroke. While every unit increase in low-density lipoprotein (LDL) increases relative mortality risk by 0.3%, the protective role of statins in ischaemic stroke may be attributable to their other effects, including anti-inflammation and improvements in endothelial dysfunction.

The authors strongly recommend that additional studies on secondary stroke prevention be conducted to support the results of the recent SPARCL trial, the only study to date that also demonstrates a secondary stroke prevention benefit from a statin — atorvastatin.⁸

The final chapter in this series will outline the best practices in stroke treatment, summarize the Action Group's 8-point call-to-action plan, and highlight the results of a recent study of statins to aggressively prevent stroke.

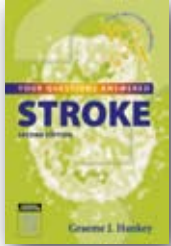
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