Prevention of strokes and recurrent strokes

Prevention is always preferred to treatment after the fact. Louis Pasteur commented that “when meditating over a disease, I never think of finding a remedy for it, but instead, a means of preventing it.” During the past half century, doctors have pursued several familiar strategies to prevent ischaemic strokes: (1) control medical disorders such as hypertension, diabetes, obesity, hyperlipidaemia, and behaviours such as smoking, excess alcohol intake, lack of exercise—known risk factors for ischaemic stroke; (2) Prescribe one treatment, a panacea. For all patients with symptomatic brain ischaemia depending on the then fashionable treatment. Vasodilators, warfarin, heparin, carotid surgery, surgical bypass, and aspirin all have had periods of favour; and (3) choose treatment according to time oriented categorisation of neurological symptoms and signs such as transient ischaemic attacks, progressing stroke, reversible ischaemic neurological deficits, and “completed” strokes.

Among these approaches only risk factor control is a viable strategy. Brain ischaemia is caused by a wide variety of stroke mechanisms and vascular occlusive lesions. The idea that one treatment would prove effective for all types of vascular lesions that cause stroke is illogical. During the past 50 years of trials, no single treatment has ever shown more than a 20%-25% effectiveness in unselected stroke patients. When will we learn that there will be no panaceas, and so stop designing large expensive trials of single therapies for nondescript lumped series of brain patients with ischaemia? Treatment of brain ischaemia characterised by temporal descriptors alone is even more foolish. Time courses such as transient ischaemic attack and “completed” stroke do not predict whether brain infarction is present, and do not distinguish between various stroke aetiologies. Cardiogenic embolism, severe stenosis, or occlusion of large extracranial and intracranial arteries, and blood. The commonest cause of death in strokes as well as all remediable stoke risk factors. Should logistically be directed at all potential causes of future strokes as well as all remediable stroke risk factors.

Adopting this strategy means that all patients with atherosclerosis and brain ischaemia should have at least full non-invasive evaluation of the heart, aorta, cranio-cerebral arteries, and blood. The commonest cause of death in patients with brain ischaemia is atherosclerotic coronary artery disease. Treatment of the systemic disease atherosclerosis in all of its manifestations is the most logical prevention strategy. Although the evaluation cost would be high, the life and brain and heart tissue saved may well be worth the economic cost and may save money in the long run.

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1 Pasteur L. Address to the Fraternal Association of former students of the Ecole Centrale des Arts et Manufactures, Paris, May 15, 1884.