

### **Stroke; preventable but highly prevalent in Pakistan**

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Worldwide more than 16 million people suffer an acute stroke every year. Over 80% survive the acute insult but most victims are unfortunately left with long-term neurological deficits making stroke the leading cause of chronic disability in adults.<sup>1</sup> In Pakistan, the incidence of stroke has not been well studied but the number is conservatively estimated as 350,000 per year.<sup>2</sup> There is an urgent need to establish a comprehensive programme in Pakistan to study the epidemiology of the disease and to develop techniques to improve education of medical personal and allocation of appropriate resources across the spectrum of health care organizations so that the problem can be better managed. This editorial is focused on three main issues, prevention, education and management of the patient who presents with an acute stroke.

Research during the last 50 years has led to the better identification of risk factors for vascular diseases. Major modifiable risk factors include uncontrolled hypertension, diabetes, smoking, obesity, sedentary life style and high cholesterol. The presence of abdominal obesity, hypertension, low HDL cholesterol combined with albuminuria (the metabolic syndrome) is a marker of increased risk, especially in individuals of Southeastern descent. In Pakistan untreated hypertension and perhaps genetic factors also contribute in a higher percent of patients presenting with cerebral haemorrhages, a condition that carries a much graver prognosis. There is good evidence that treatment of such risk factors can significantly reduce the risk of haemorrhagic and ischaemic stroke.<sup>3</sup> A reduction in diastolic blood pressure of as little as 6 mmHg can result in a highly significant 42% relative risk of stroke over 5 years.<sup>4</sup> There is also evidence from at least two sources that early evaluation and appropriate management of patients at the highest risk of stroke and patients presenting with a transient ischaemic attack (TIAs), can have the risk of subsequent stroke reduced by over 80%.<sup>5,6</sup> This level of reduction can however only be achieved if the patients are evaluated early and treatment initiated immediately.

Stroke together with other atherosclerosis related diseases are global problems of immense proportions. What can we do in Pakistan to reduce the burden of disease? Prevention is the key to success. We require

'reader-friendly' texts at all levels of education on risk factors of atherosclerosis. Early awareness may be particularly rewarding if it becomes part of the educational curriculum at the high-school level. Stroke risk factors need recognition in mass media campaigns and require repeated promotions. Healthy eating, exercise, smoking cessation, diagnosis and effective management of hypertension and diabetes are essential components of such awareness programmes.

The work does not stop there. The minimal time devoted to teaching of atherosclerosis in the medical college curriculums has been a subject of long neglect. For stroke prevention, we need to focus on the understanding and management of risk factors. The students also require an understanding of how well to recognize and treat TIAs and minor strokes. Forty percent of strokes are preceded by a TIA and the risk of stroke in such individuals is 'front-loaded'.<sup>3</sup> Large case-series from a variety of sources support the hypothesis this risk is at least 10% at 90 days and over half of the events occur within the initial 48 hours of the TIA.<sup>7</sup> This risk can be lowered to under 2% if such patients are evaluated within 24 hours from onset and aggressively managed.<sup>5,6</sup>

Despite efforts at prevention, stroke will still occur. While a fortunate few may benefit from thrombolysis, in the vast majority prevention of complications and prophylaxis against further events still remains the best strategy to manage such patients. All large hospitals must establish stroke units for management of stroke patients. Meta-analysis from several studies indicate that this mode of care results in a significantly higher number of patients discharged home independently.<sup>8</sup> Such Units are not expensive and should be part of any comprehensive stroke strategy for Pakistan.

These are challenging times in the health care system in Pakistan. Very little of the meager resources are allocated to prevention of vascular diseases. There are compelling epidemiological and scientific reasons that the incidence of such diseases will increase in the coming decades. By better understanding of the immensity of the problem and appropriate allocation of funding at the national level, we can hope to bring dividends to the population at risk.

## References

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### FROM THE EDITOR'S DESK

The present issue comprises of articles from all categories on the subject of STROKE. It is the second in series on subject of Neurology. The credit for this issue goes to the very academic minded Neurologists from all over the country and some from abroad. They have worked hard to produce the latest research results on various aspects of Stroke. Due to the small number of Neurologist contributors, there is a repetition of the names in the same issue. This has to be overlooked. All the contributors are acknowledged and congratulated.

**Editor**