

Differences in epilepsy and seizures between Asia and the West

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Abstract

There are some biological differences in epilepsy between the Asia and the West, mainly related to the young average age and the smaller physique among Asians. The climatic differences partly account for the higher prevalence of Japanese encephalitis and malaria, which remains important causes of acute symptomatic seizures in parts of Asia. By comparison, psychosocial, cultural, economic, political and organizational factors are much more important in influencing epilepsy causation, management and outcome in the region. With limited resources, the later should be given priority in research to improve epilepsy care in Asia.

INTRODUCTION

In view of limited resources, it is pertinent to examine the main differences in epilepsy between Asia and the West, so as to concentrate the limited resources on issues facing Asia, to ensure better epilepsy care in the region.

BIOLOGICAL AND ENVIRONMENTAL FACTORS

There are some biological differences, if one looks for differences in epilepsy between the East and West. In contrast to the West, the mean age of Asians remain young. Unlike most countries in Western Europe, currently Japan is the only country in Asia with more than 20% of population older than 60 years. Many epidemiological studies in Asia shows peak age in children and young adults¹, with only one study from Shanghai² follow a bimodal distribution with first peak in childhood and another in elderly as in the developed countries in the West. East Asians are generally of smaller physique. This probably partly explains the smaller doses of antiepileptic drugs found effective in some trials involving the Asians.³ On the other hand, there is no evidence presently of any genetic epilepsy syndrome with different frequencies in the Asian populations.

As for environmental factors affecting the etiology and prevalence of seizures in Asia, Japanese encephalitis is numerically the most important encephalitis in the world, affecting 50,000 patients with 15,000 deaths annually mainly in Asia. Risk of seizures in Japanese encephalitis is 65% for acute symptomatic seizures

and 13% for chronic epilepsy.⁴ Neurocysticercosis is probably an important cause of seizures and epilepsy in regions with a high prevalence of *Taenia sodium* infection in human beings. In Asia, this includes India, Nepal, Bali, Papua and Sulawesi in Indonesia, and parts of Vietnam and China.¹ Malaria is still widely endemic in Asia, with more than 3 million cases per year. India, Myanmar, Indonesia, Pakistan, Cambodia, Papua and New Guinea and Bangladesh each have more than 50,000 cases per year.⁵ Close to 8% of patients with childhood malaria in Thailand had convulsions.⁶

PSYCHOSOCIAL, CULTURAL, ECONOMIC, POLITICAL AND ORGANIZATIONAL FACTORS

By comparison, psychosocial, cultural, economic, political and organizational factors are much more important in influencing epilepsy causation, management and outcome in Asia. Whereas the prevalence and incidence of epilepsy in Asia is similar to the West¹, reversible etiologies such as head trauma, infections, stroke, obstetric care are probably more important in Asia.⁷ Post-traumatic epilepsy was said to account for 5% of total epilepsy in China⁸ and two fifths in Mongolia.⁹ In Asia, consanguineous marriage is common in certain cultures, in particular among Indian and Muslim populations. A study of epilepsy among Indians in Malaysia showed that 29.5% of them had a parental consanguineous marriage; with significant association with consanguinity in idiopathic and cryptogenic epilepsy.¹⁰ Treatment

gap is defined as the proportion of people with active epilepsy who is not appropriately treated at a given point of time. The treatment gap for Asia in most countries is between 50% and 80%, higher in the rural areas.¹ There are multiple factors for high treatment gap. The access and availability of antiepileptic drugs is probably an important factor. In most parts of Asia, there are limited amounts of or no subsidized antiepileptic drugs.¹ Though dedicated studies on use of traditional and complementary medicine is lacking, many clinicians have reported widespread use of traditional medicine and spiritual medium, particularly in the rural areas.¹¹ There is less epilepsy surgery¹², and the paramedical professionals, such as nurses, occupational therapists, and educators rarely participate in the management of epilepsy in Asia.¹³ Numerous studies on knowledge and attitudes towards epilepsy has been done in Asia, particularly in Chinese communities within and outside China. Many communities remain negative towards people with epilepsy, with a third to half thought that a person with epilepsy cannot work like other people.¹ There are also reports of high mortality of epilepsy sufferers in parts of Asia.^{14,15} The development of epilepsy care is commonly driven by epileptologists, neurologists with a special interest in epilepsy. If an epileptologist is defined practically as someone who has had a period of fellowship after training in general neurology, only Japan, South Korea, Singapore and Taiwan have at least one epileptologist per million people.¹

In conclusion, what distinguishes epilepsy in Asia from other regions is probably not so much genetics or biological differences of Asians or environmental factors that influence the causes of acute symptomatic seizures and epilepsy, but the psychosocial, cultural, economic, political and organizational factors that influence epilepsy causation, management and outcome. These areas should be the focus of further study to improve epilepsy care in the region.

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