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Epilepsy in South East Asia

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The First ASEAN Epilepsy Conference on 14th December 1996 held in Singapore is a historically important event for epilepsy in South East Asia, for it is the first time that neurologists in South East Asia has gathered to share and learn in a conference solely dedicated to epilepsy. This article aims to take stock of what is known about epilepsy in this region with a view to achieving better care in the future.

EPIDEMIOLOGY

The prevalence of epilepsy is said to be about 3 to 9 per 1,000 population.[1] Certain regions has reported high prevalence, this is particularly so for countries in Latin America and Africa.[2] As for countries in Asia, the prevalence rate from published reports are: China (4.4)[3], Japan (1.7)[4], Parsis in India (4.7)[5], Kashmir in India (2.47)[6], Pakistan (9.85)[7], Sri Lanka (9.0)[8], and Guam (4.9).[9] For the South East Asian countries, only Singapore has estimations of prevalence of the illness. Lee et al[10] was able to identify 336 children with epilepsy among 101,257 life births from all Government Hospitals from 1/1/80 and 31/12/1982. The cumulative incidence of epilepsy for Singapore children by the age 9 years is thus 3.50 per 1,000 which is similar to rates reported from elsewhere. There is no significant difference in the rates among males and females, with significantly lower rates in Malays compared to Chinese and Indians. Another study by Loh et al based on the medical examination on army recruits (which is compulsory for all Singapore men) reported a cumulative incidence of epilepsy by age 18 years at 5 per 1,000.[11] In this study, the cumulative incidence per 1,000 population is also lower among the Malays (2.9) compare with Chinese (5.7) and Indians (4.8). An earlier study from Singapore also reported a lower than expected cases of epilepsy from among the Malays (9.1% versus population ratio of 15%), particularly when compared with the Indians (13.42% versus population ratio of 7%).[12] Malaysia is another multiracial country with Malays, Chinese and Indians forming the three main racial groups. In a recent report of 165 newly diagnosed epilepsy from the University of Malaya Medical Centre, the racial composition were Chinese (36%), Malays (29%), Indian (35%)[13], whereas the racial composition of the non-obstetric outpatients of the same Centre was: Chinese (41%), Malays (30%), Indians (27%) and others (2.4%), thus showing no predisposition to epilepsy among the three racial groups. Overall, the studies suggest that the prevalence of epilepsy in Singapore falls in the range of figures reported elsewhere, and Malays may be less prone to developing epilepsy when compared with Chinese and Indians.

As for febrile seizures, based on a study of 30,754 children born in two public hospitals in Singapore, Lee et al[14] has estimated the cumulative incidence of febrile seizure by 6 years to be 4.47% overall, 5.14% in male, and 3.0% in female. This falls in the range of 2-5% reported elsewhere[14,15], but higher rates has been reported in Japan.[16] There were no significant differences in rates between the three racial groups, Chinese, Malays and Indians. For patients with childhood febrile seizures, Lee et al [17] has also estimated the cumulative risk for afebrile seizure 5 years later to be 1.5%, confirming the benign nature of the disease.

CLASSIFICATION, EPILEPSY SYNDROME AND ETIOLOGICAL FACTORS

In a report of 165 cases of newly diagnosed epilepsy in Malaysia, the classification was: generalized (42.4%), localisation related (57.6%). Of the generalized epilepsies, sub-classification was as follows: idiopathic generalized (28.5%), juvenile myoclonic epilepsy (5.5%), Childhood absence epilepsy (3.6%), West Syndrome (3%), Lennox Gastaut syndrome (1.2%). In the localisation related category, the seizure type was: secondary generalized (32.7%), complex partial seizure with secondary generalization (6.7%), complex partial seizure without secondary generalization (3%), simple partial with secondary generalization (9.1%), simple partial without secondary generalization (6.1%), benign rolandic epilepsy (3%).[13] This is similar to series from elsewhere.[18] Of those with age of onset <15

years, it was childhood absence epilepsy (8.7%), benign rolandic epilepsy (7.2%), West syndrome (7.2%) and Lennox Gastaut syndrome (2.9%).[13] Both juvenile myoclonic epilepsy and benigh rolandic epilepsy were seen among all the three major races.[19,20] In the 336 children of less than 9 years with epilepsy in Singapore, Lee et al[10] found benigh rolandic epilepsy in 14.9% and childhood absence epilepsy in 3.6%. Thus childhood absence epilepsy is an important cause of childhood epilepsy in Malaysia and Singapore. It is also an important cause of childhood epilepsy in Thailand (personal communication, Dr Pongsakdi Visudhiphan), although it has been earlier said to be uncommon in the neurology practices in Malaysia and Thailand.[21,22]

Of the series of newly diagnosed epilepsy from Malaysia mentioned above, 22% of the cases were symptomatic. The associated conditions were: cerebral palsy/mental retardation (7.9%), systemic lupus erythematosus (3.6%), meningoencephalitis (2.4%), stroke (2.4%), head injury (1.8%) and tumor (1.2%).[13] The relative unimportance of stroke and tumor as causes of epilepsy reflects the young age of the study population. The average age of onset of epilepsy was 19 years. The data also emphasizes the importance of systemic lupus erythematosus, which is more commonly seen among the ethnic Chinese.[23] Vejjajiva has mentioned that it is also an important illness in Thailand.[22] Central nervous system infections, poor antenatal and perinatal care, febrile seizures, head injury and inbreeding may be some of the aetiological factors of epilepsy in the tropics.[24] There has been reports of neurocysticercosis as important cause of epilepsy in Bali[25], and among the Gurkhas (Nepalese) in Hong Kong.[26]

EPILEPSY CARE

Based on an informal survey by the author (CTT) in 1995, there is great variability in the care of epilepsy in South East Asia, depending on factors such as the economic status, the medical health system, rural or city residence, private or government practice. The population per neurologist varies widely as follows: 110,000 (Singapore), 300,000 (Brunei), 420,000 (Thailand), 440,000 (Vietnam), Indonesia (700,000), Philippine (760,000), Malaysia (1 million) and Myamar (20 million). In Thailand, Philippine and Malaysia, about two thirds of the neurologists work in the national capital cities of Bangkok, Manila and Kuala Lumpur respectively. In Malaysia, half of the neurologists see private patients exclusively. In Philippine, almost all the neurologists are in private practice although 50% of the neurologists spend a fifth of their time seeing public patients. In Singapore, about one third of neurologists are in the private sector. Thus, taking the region as a whole, most epileptics are seen mainly by the medical officers in consultation with general physicians, paediatricians and neurologists. For those in the capital cities, especially those who are under private care, more patients are being seen by the neurologists. In Vietnam, care of epileptics is largely by the psychiatrists in most regions.[27]

The availability of CT scan is rather restricted in Vietnam and Myamar, and is becoming fairly widely available in the other parts of South East Asia. MRI is available in Singapore, Malaysia, Brunei, Thailand, Philippine and Indonesia. All the 4 MRIs in Philippine, 11/13 MRIs in Malaysia, 4/6 MRI in Indonesia, 4/8 MRI in Thailand, 4/9 MRI in Singapore and the only MRI in Brunei are privately operated. Thus, the use of MRI is restricted except in private practice. As an example of the investigations done, in a survey done by the author (CTT) in 1995, for the epileptic patients from Kuala Lipis which is a rural district 200 KM from Kuala Lumpur, 41% had EEG, none had CT scan or MRI. As for the epileptic patients from the University Hospital in Kuala Lumpur, almost all had EEG, about 70% had CT scan and occasional patients had MRI, mainly for the assessment of epilepsy surgery.

As for the use of anticonvulsants, based on data from IMS and the informal survey mentioned above, phenobarbitone is still the most commonly used drug in Vietnam, Myamar, Indonesia, Philippine and Thailand; although phenytoin, carbamazepine, valproic acid and clonazepam as well as the newer anticonvulsants are all widely prescribed particulaly by the neurologists. In Vietnam, oral diazepam is also commonly used as prophylactic anticonsulsant. Based on IMS prescription data, the anticonvulsants used in Philippine were: phenobarbitone (48%), phenytoin (25.3%), carbamazepine (20%), valproic acid (4%) and clonazepam (3%).[28] Based on drug supply in the Government and private sectors (1995), the anticonvulsants used in Malaysia were: phenytoin (57.5%), carbamazepine (17.5%), valproic acid (12.5%) and phenobarbitone (12.5%). Lim et al from Singapore reported the anticonvulsant usage in a tertiary referral hospital. 62.7% were on monotherapy. The drugs used were: carbamazepine (52%), valproic

acid (24.3%) and phenytoin (22.3%). 18.2% were taking newer anticonvulsants (gabapentin, lamotrigine, vigabatrin) as add-on.[29]

TREATMENT GAP

Treatment gap is the percentage of persons with active epilepsy who at any one time are not receiving anticonvulsant treatment. It is believed that there is large treatment gap in the developing countries.

Based on community survey, the treatment gap for epilepsy for Pakistan was 98% in the rural area and 73% in the city area.[7] The figure for Nigeria was 96%[30], Ecuador was 79%[31] and Kashmir was 75%.[6]

An indirect estimation of the treatment gap is to use anticonvulsant drug supply figures to determine the number of patients receiving treatment, assuming that patient will be taking monotherapy with standard daily regime. The prevalence of epilepsy is assumed to be 5/1,000.[32] Using this method, the treatment gap was 94% for Philippine[32], and 68% for Malaysia. However, for rural Malaysia, estimation from Sabah and Kuala Lipis district showed that it was much higher at 90%.[33]

As rural Malaysia is served by a good net work of primary health care service where all the commonly used anticonvulsants are provided at minimal cost, the high treatment gap suggests the social-cultural factors playing a dominant role in lack of acceptance of modern epilepsy treatment. This is substantiated in a preliminary survey of the author (CTT)'s ethnic Chinese chronic epileptic patients in Kuala Lumpur, where 85% were drug resistant, who have an average monthly family income of US$1,000. 85% of the patients or main care-giver admitted to the use of alternative treatment. Over an average period of 8 years, the patients spent an average of US$3,600 each consisting of spiritual medium (US$1,600), Chinese traditional medicine (US$1,100) and food supplements based on traditional Chinese medicine beliefs (US$950). As for the concepts of causation of epilepsy, 85% admitted to having epilepsy, but many also holds concurrently to other beliefs which are: weakness (xu), heatiness (re) and wind (feng) in 69%; supernatural cause (xie) in 31%; and other believes such as eating of goat meat during pregnancy in 23%. This is not to deny that some of these traditional treatments may be proven useful when subjected to scientific evaluation.[34] The prevalence of such beliefs and practices differs in different cultures. For example, traditional medicine is said to be not used as primary mode of treatment of epilepsy in Philippines.[28] In this context, it is encouraging to see the establishment of epilepsy associations in Indonesia[33], Malaysia[36] and Singapore[37] and Thailand. However patient-based mutual help support group is to-date still largely a Western phenomenon. Its role, effectiveness and modus operandi in a rural setting of the South East Asian cultural milieu for a stigmatized illness such as epilepsy is uncertain and should be approached with imagination, flexibility and an open mind. Other reasons for the high treatment gap in the developing countries are the high cost of drugs, inadequate or unreliable drug supply, poor access to medical services, and lack of skill in diagnosis and treatment by medical profession. For example, Chandra in 1993[38] estimated the yearly cost of phenytoin at US$164, whereas the average yearly income of an Indonesian patient was only US$936. Economic factor would be expected to contribute to treatment gap in the community.

EPILEPSY SURGERY

Tan et al[39] from Singapore reported the MRI findings of 140 patients with chronic partial epilepsy. 76.4% had focal structural abnormalities, 43.6% had mesial temporal sclerosis. Ng et al[40] from Malaysia studied the MRI of 23 patients with drug resistant complex partial seizure. 44% had mesial temporal sclerosis. The population in Malaysia is currently 21.3 million. Assuming the prevalence of epilepsy of 0.5%; 10% of the epilepsies have complex partial seizure[13]; a quarter of the patients are resistant to drug treatment; and 44% of the drug resistant patients has mesial temporal sclerosis[40]; there would be about 1,000 patients with mesial temporal sclerosis in Malaysia who will potentially benefit from epilepsy surgery. In the region, impressive results of epilepsy surgery has been obtained from Taiwan[41]and Singapore.[42] Tan et al[43] argued that in Singapore, it is less costly for suitable surgical candidates to have epilepsy surgery than to be prescribed long-term new anticonvulsants. This does not take into account the vastly improved quality of life from better control of seizure. Development of epilepsy surgery should thus take high priority in this region.

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