

# Epilepsy in Nepal

Krishna C. RAJBHANDARI MBBS, DPM, MD

Nepal Epilepsy Society, Kathmandu, Nepal

## Abstract

This is a review of epilepsy in Nepal. Nepal is a predominantly rural country with 21 million populations. A community based survey in Morang district showed that the prevalence was 7.3 per 1,000 populations. A cohort of 300 cases in Shree Birendra Military Hospital showed that neurocysticercosis was the most important etiological cause. There are 7 neurologists, 10 CT scan, 3 MRI, and 4 EEG in the country. The practice of anticonvulsant use varied according to different geographical locations. Treatment gap may be in excess of 70%. The epidemiology study in Morang district showed that the proportion seeking modern treatment was higher among those with more frequent seizure. None of the patients were able to attribute their illness to brain disease. Various forms of traditional treatment are widely practiced in all casts among Hindus as well as Buddhists.

## INTRODUCTION

Nepal has a population of 21 million. It is famed for its natural beauty near the Himalayas with a largely rural population. Kathmandu is the largest city and capital with a population of 1.08 million (Ministry of Population and Environment, Nepal). Economically, it is one of the poorest countries in the world with gross national product of about US \$200 per year. The doctor per population ratio is 1: 20,000 (Ministry Of Population and Environment, Nepal). It is multireligious and multiethnic in its population structure, consisting mainly of Hindu (90%), Buddhist (9%), and others (1%). The ethnic composition is: Nepalese inclusive of Gurkha and Khasi (51%), Tharu (14%), Bihari (11%), Tamang (6%), Newar (5%), and others. The main economic activities and income are tourism, farming, Gurkhas as mercenary soldiers, remittance from foreign workers. Caste system remains important in the social cultural life in Nepal. The 6 major castes are: *Newar* who are mainly merchants, Brahmin who are the priestly caste, *Chhetriya* who are warriors, *Vyshya* who are farmers and merchants, and *Shudra* who are laborers.

## TERMINOLOGY, PREVALENCE AND CAUSES OF EPILEPSY

*Charaka & Susruta*, the ancient Nepalese Hindu physicians of 3000 B.C. described “*Apasmara*” as Sanskrit synonym for epilepsy. “*Apa*” means loss and “*Smara*” means memory or cognition.

Hence “*Apasmara*” is described as a disease characterized by loss of memory or cognition. It is also described as being due to deranged function of “*Budhi*”, which controls the sensory, motor and visceral function of the body, and “*manas*” the consciousness. Various Nepalese ethnic groups also use the term “*Chhare*”, “*Murchhe*” & “*Mirgi Rog*” for epilepsy.

A study of Morang district based on house-to-house survey of 823 households covering 4,636 people showed a prevalence of epilepsy of 7.3 per 1,000 populations, 6.8 for males, and 7.9 for females.<sup>1</sup>

Shree Birendra Military Hospital was a military general hospital in Kathmandu, which also serves the military personnel’s family members and the accident cases. A study by Rajbhandari<sup>2</sup> was done in year 2000 on 300 newly diagnosed epilepsy, all with EEG, and MRI. The cause of epilepsy was determined to be: neurocysticercosis (47%), tumors (9%), vascular disease (4%), nutritional (3%), and head injury (2%). As shown, neurocysticercosis was the most important cause of epilepsy in Nepal.

## PRACTICE OF EPILEPSY CARE

As for medical health system and facilities, there are government run hospitals, health clinics, and private hospitals. In the Government health facilities, the patients pay subsidized rates. There are only 7 neurologists, 10 CT scan, 3 MRI, and 4 EEG in the country. The Nepal Epilepsy Society

is a member of the International League Against Epilepsy. The anticonvulsant drugs available are: phenytoin, phenobarbitone, carbamazepine, sodium valproate and topiramate. The anticonvulsant use is probably dependent on the geographical location, availability and the local practice. The study on 180 epilepsy patients in the Western General Hospital, Pokhara showed the drugs commonly used were: phenytoin (39%), phenobarbitone (33%), carbamazepine (9%), sodium valproate (3%), phenobarbitone and phenytoin (13%).<sup>3</sup> A report of 113 epilepsy patients from 4 village health posts in Kaski district showed that phenobarbitone was used in all the patients.<sup>4</sup> Another outpatient clinic of a teaching hospital with 93 patients used phenobarbitone (55%), carbamazepine (30%), phenytoin (7%), sodium valproate (3%).<sup>5</sup> In the Shree Birendra Military Hospital, carbamazepine was used as monotherapy in 92% of the patients.<sup>2</sup> Facilities for epilepsy surgery is yet to be developed.

### TREATMENT GAP

The epidemiology survey in Morang district identified 34 patients with epilepsy. Of these, 9 patients (26%) were currently receiving anticonvulsant treatment. Another 4 patients (12%) had received anticonvulsant treatment previously.<sup>1</sup> Treatment gap, expressing the proportion of patients with epilepsy who at any one time are not receiving anticonvulsant treatment was 74%. As for the report from the village health posts in Kaski district, there were 113 patients in a district with 105,000 populations, with a mean duration of 6.5 years before diagnosis.<sup>4</sup> Based on a prevalence of 7.3 per 1000 population<sup>1</sup>, the treatment gap was more than 80%.

Of the 34 patients identified in the epidemiology survey in Morang district, 3 patients (9%) was treated by the traditional healers at the time of survey, and another 10 patients (29%) had previously been treated by the traditional healers.<sup>1</sup> Thus, the patients was just as likely to seek treatment from modern medicine as compared to the traditional healers. However, probably due to lack of effectiveness, the drop out rate from the traditional healers was higher. The proportion of patients seeking treatment was higher among those with more frequent seizures, 7/15 (47%) among those with greater than 16 seizures, and 5/19 (26%) with less than 16 seizures. The delay in seeking modern treatment

was probably also related to the concepts of epilepsy. When asked the cause epilepsy, none of the patients attributed the illness to brain disease, majority responded that they did not know (32%), others attributed the illness to weakness (21%), disease (9%), and evil spirit (9%).<sup>1</sup>

### TRADITIONAL PRACTICE OF TREATMENT OF EPILEPSY

In the study by Rajbhandari in the Shree Birendra Military Hospital<sup>2</sup>, the patients were surveyed for their use of various traditional treatment of epilepsy. The patients were mainly males (69%), adult of age 15-34 years (57%), low social economical status (75%), unemployed (55%), non-vegetarian (91%). The duration of illness was: less than one year (39%), 1-4 years (35%), 5-6 years (27%). The castes were: *Chhetriya* (warriors, 46%), Brahmin (23%), *Vyshya* (farmers and merchants, 16%), *Newar* (merchants, 9%), *Shudra* (laborers, 3%), and Buddhist (3%). Table 1 shows the practice of traditional treatment among the epilepsy patients.

As shown, the practice of traditional treatment of epilepsy was prevalent among all the Hindu casts as well as Buddhist. The study showed that Nepalese have strong believe in the supernatural origin of epilepsy, with common practice of using various methods to protect from the evil spirits or ghosts, and appease or appeal to the gods for help. There were however, significant differences between the Buddhist and the Hindus, with the Buddhist concentrating their appeals through the monasteries.

Finkenbine et al<sup>4</sup> in the report from the village health post in Kaski district, commented that it was more convenient to visit a traditional healer (*Jhankri*) than to come to the village health post. In addition, the traditional healer often made "house calls". The largely rural population and the low number of doctors probably contributed to the frequent use of traditional healers' services. Sharma<sup>6</sup> who reported a study based on 150 traditional healers, commented that traditional healers were very influential; they formed the point of first contact for any health problem in the rural population as well as some of the urban population. The survey of traditional healers was done in Morang in the Eastern region and Banke in the Western region. It was found that the traditional healers used a variety of methods to treat fainting attacks, including *ghar phuk* (sprinkles treated water over the forehead) in 59%, herbal medicine (14%), casting anti-spell

**Table 1. Practice of traditional treatment among 300 newly diagnosed epilepsy patients in Shree Birendra Military Hospital, Kathmandu<sup>2</sup>**

	<b>Chhetriya N=137</b>	<b>Brahmin N=70</b>	<b>Vyshya N=48</b>	<b>Newar N=27</b>	<b>Shudra N=10</b>	<b>Buddhist N=8</b>	<b>Total N=300</b>	<b>%</b>
<b>Worshipping family gods</b>	110	60	20	6	7	4	207	69
<b>Wearing mantra butti, jantar, beets</b>	80	55	40	12	10	nil	197	66
<b>Animal sacrifice</b>	120	nil	30	15	10	nil	175	58
<b>Pitri puja</b>	75	65	15	11	8	3	172	57
<b>Jhar phuk</b>	60	50	nil	26	10	8	152	51
<b>Holding sharp metallic objects</b>	70	40	10	5	6	nil	131	44
<b>Worshipping ghosts and evil spirits</b>	40	30	35	10	3	nil	118	39
<b>Dhami jhankri</b>	40	30	30	4	8	nil	112	37
<b>Possessed by Azima goddess</b>	40	4	20	27	5	2	98	33
<b>Smelling dirty clothes and shoes</b>	45	8	10	nil	7	nil	70	23
<b>Beating with broomstick and hot iron</b>	8	nil	4	6	5	nil	23	8
<b>Worshipping Buddha Ghyang</b>	nil	nil	12	nil	nil	8	20	7

*Worshipping family gods:* The affliction is believed to be from ancestral spirit as a punishment for breaking family culture, religious and social practices. In worshipping family gods, the practitioner hopes to appease the ancestral spirit.

*Wearing mantra, butti, jantar and beets:* This is believed to protect the patients from the evil spirits.

*Animal sacrifice:* Male animals or birds are usually offered to appease the angry gods or pacify the devils to withdraw from the patients.

*Pitri puja:* The sickness is thought to be due to family members failing to perform yearly ritual offerings in the name of departed souls through the service of professional Brahmin. The ritual offerings are reinstated.

*Jhar phuk:* The professional traditional healer “*Gubhaju*”, they sprinkle treated water over the foreheads of the patients to prevent further seizure attack.

*Holding sharp metallic objects:* The patients are made to hold sharp metallic object like knife and bunch of keys to expel the evil spirits or to ameliorate the attack.

*Worship ghosts & evil spirits:* In Hinduism, in the event of unnatural deaths (*Akal mrityu*), a sinner does not bring on eternal damnation. The spirit of the dead remains on earth as an evil spirit or ghost until the granted punishment sanctioned by the god of death, “*Yam Raja*”. This evil spirit causes problems and ill health on the family members. The relatives worship to the evil spirit or ghost or ask god for mercy by offerings to the Brahmin to have the patients free from disturbances by the evil spirit.

*Dhami jhankri:* The traditional healers who is able to discern the problems faced by the patients, and proscribe various treatments such as beating the drum to expel evil spirit from the patient.

*Possession by Azima goddess:* Female devotees become healers by being possessed by goddess *Kali* (force of protectress). She is then able to protect the patients from the evil spirits.

*Smelling dirty clothes and shoes:* This is to insult and expel the evil spirits present in the patients.

*Beating with broomstick and hot iron:* The Hindus believe that epilepsy is due to revenge of the witches. Beating with broomstick and hot iron are torturous means to expel the spirits of the witches.

*Worshiping Buddha Ghyang:* Most of the Buddhist epileptics believe re-incarnation after death, which is determined by the past deeds. Epilepsy is due to failure to follow Buddhism. The victims visit Buddhist monasteries for mercy, and prayers are offered on behalf of the patients by the Lama.

“*Phuk*” on water for patients to drink (9%), inviting god to come by offering *puja* (*devata bolauna*, 9%). As for possession, 21% listed dizziness as a manifestation. A variety of methods were again used to treat the possession attack, including *jhar phuk*, herbal medicine, inviting god to come by offering *puja*, and amulet wearing. The author commented that reinforcement by the traditional healers for epileptic to seek anticonvulsant treatment may be helpful to improve the compliance to treatment.

## CONCLUSION

Epilepsy in Nepal remains a big challenge. Potential for preventive treatment exists with the large proportion of symptomatic epilepsy from neurocysticercosis. The high treatment gap, the widespread use of traditional healers for epilepsy, and the poor understanding of epilepsy among the epilepsy patients demands greater efforts in public and patient education, and improvement of manpower and physical resources in the treatment of epilepsy.

## ACKNOWLEDGEMENTS

The author would like to express his gratitude to Mrs. Usha Rajbhandari, Dr Pravesh Rajbhandari, Dr Reema Rajbhandari and Dr Nivesh Rajbhandari for their various help.

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