

seizure, such as the presence of previous, recurrent, nonconvulsive, or mildly convulsive epileptic attacks (e.g., morning myoclonus), and also the differential diagnosis of an epileptic seizure.

The bottom line is that the potential for improvement of the approach to and care of a patient with an unprovoked seizure is unequivocal. The main goal is to move beyond the obvious scenarios and improve management of those situations in which a seizure occurs and all tests are normal. An unacceptably large proportion of these patients are either taking AEDs for years for nonepileptic disorders or having avoidable epileptic seizure recurrences because a diagnosis of epilepsy was not made.

Finally, there are a number of external modifiers to the standard overall approaches. For instance, recent data indicate that only 25% of Brazilians are covered by private health insurance and MRI scanners and EEG laboratories are less available to patients seen under coverage of the public health system, particularly outside major university hospitals. Thus, MRI and EEG will take longer in these patients, implying that coverage of the evaluation costs and differences in access to facilities in urban and rural areas do have an impact on management. This necessarily raises the issue of what would be the best approach, to begin with an AED even without a comprehensive workup or withhold the prescription until more information is available. Inevitably, these end up being individual decisions, but the trend is toward prescribing an AED to patients in these circumstances.

Ideally, patients with an unprovoked seizure should undergo detailed medical history and neurologic examination, routine blood tests, as well as an MRI scan and an EEG as soon as possible. When the likelihood of an epileptic mechanism is high on the list or the potential negative psychosocial impact of a second attack is thought to be significant, then the threshold to begin with an AED should be lowered. Because in Brazil AED costs are not reimbursed by private insurers and the public health system provides only a limited number of AED types, the medication started will vary according to socioeconomic and psychosocial profiles in different regions of the country. In many rural areas this translates into phenobarbital, while in other regions doctors may prescribe either valproate or a sodium channel blocker such as carbamazepine, oxcarbazepine, or phenytoin. Of course, considerations on the epileptic seizure type and special situations such as pregnancy should apply, although such choice is also on a learning curve.

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Kurupath Radhakrishnan, MD, FAAN, Chaturbhuj Rathore, MD, Ramshekar Menon, MD, R. Madhavan Nayar Center for Comprehensive Epilepsy Care, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala, India: There is no uniform approach to assessment of an unprovoked seizure in an adult in India. Due to the huge socioeconomic differences among its vast population and the varied levels of available health care, the approach differs significantly across the country. Certain unique features of health care in India have direct bearing on any such approach. First, most of the health care costs are directly borne by the patient or caregivers. Secondly, the majority of the population live in rural areas and are cared for by primary care physicians or internists who have little training in the evaluation and management of seizures and do not have access to perform or expertise to interpret EEG or CT scans.¹ On the positive side, phenytoin and phenobarbital are provided free of cost to all patients at primary and secondary level state-run hospitals. Similarly, the charges for various investigations including EEG, CT scan, and MRI are subsidized in the state-run tertiary care centers according to the economic status of the patient. Prevalence of neurocysticercosis within a region also influences this approach. The authors have worked in different regions of the country at various levels within the health care system and have

noticed different approaches which are largely determined by the above-mentioned factors. Any approach is, however, applicable only to those patients who seek medical care. Higher levels of illiteracy, ignorance, perceived stigma, and belief in traditional practices prevent patients from seeking medical care, with a treatment gap as high as 50%–80%.²

The Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, where the authors are currently practicing, is a tertiary level neurology care center with a well-developed comprehensive epilepsy program. Any patient with a presumed first seizure is always evaluated by a neurologist with an aim to differentiate from nonepileptic events, determine the type of seizure, probable epilepsy syndrome, and etiology based on clinical details. All the patients undergo an awake and sleep scalp EEG recording. All patients coming to the emergency department with a first seizure and those with suspected focal or unclassified seizures after an EEG also undergo plain and contrast-enhanced brain CT scan. Patients with preexisting neurologic deficits, family history of epilepsy, interictal epileptiform discharges on EEG or a focal lesion on CT scan, and those above 60 years of age with a definite seizure are usually started on antiepileptic drugs (AEDs) after discussing all the relevant details with the patient. Patients with focal seizures are initiated with carbamazepine or phenytoin, while those with generalized or unclassified seizures are started on sodium valproate or phenobarbital depending upon the economic status of the patient. Women of childbearing age having generalized seizures are initiated on lamotrigine/levetiracetam or low-dose valproate/phenobarbital as monotherapy. Economic status is the most important determinant for the initial and subsequent AED therapy. Patients are usually followed up every 6 months and subsequent decisions are individualized. MRI is reserved for patients with AED-resistant epilepsy and is provided on subsidized rates. Neurocysticercosis is nonexistent in Kerala. In cysticercus endemic areas, if the initial CT scan shows a single/multiple ring-enhancing lesions, the patient is initiated on either phenytoin or carbamazepine with and without anticysticercal therapy. Repeat CT scans are performed after 6–9 months and AEDs are usually withdrawn following resolution of the lesion.³ In case of diagnostic uncertainty about the nature of ring-enhancing lesion, additional tests including CSF study, contrast-enhanced MRI, and even brain biopsy are undertaken in select cases.

Although the above-mentioned approach is usually employed at all the major neurologic centers, these probably cater to only 10%–20% of all patients with epilepsy. The majority of patients are cared for at primary and secondary level health centers where almost all the adult patients with an unprovoked seizure are started on phenytoin or phenobarbital without any further investigations or proper counseling. However, in private health care setup in urban areas, patients may undergo all the unnecessary investigations, including MRI. Inappropriate polypharmacy is often initiated if the seizures persist. A significant number of patients may decide to stop drugs after 2–3 years whether they become seizure-free or not, and may not seek any further medical care. This decision is often driven by family misconceptions, perceived stigma of having epilepsy, or side effects of the AED. Only a minority will be further referred for evaluation by a specialist. Recognizing this extreme heterogeneity, the Indian Epilepsy Society had issued specific guidelines in this regard for primary care physicians.⁴ However, there is a long way to go before a standard uniform approach becomes a reality throughout the country.

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