The clonic phase, which follows the tonic phase, is characterized by alternating contraction and relaxation of the muscles in all the extremities along with hyperventilation (Figure 42–4B). The eyes roll back, and the client froths at the mouth. The clonic phase varies in duration and subsides gradually. The entire tonic-clonic portion of the seizure generally lasts no more than 60 to 90 seconds.

Following the clonic phase of seizure activity, the client remains unconscious and unresponsive to stimuli. This period is known as the postictal period or phase. The client is relaxed and breathes quietly. The client regains consciousness gradually and may be confused and disoriented on waking. Headache, muscle aches, and fatigue often follow the seizure, and the client may sleep for several hours. Amnesia of the seizure is usual; the client also may not recall events just prior to the seizure activity.

Because of the lack of warning with tonic-clonic seizures, the client may experience injury. Head injury, fractures, burns, or motor vehicle crashes may occur secondarily to seizure activity.

**Status Epilepticus**

**Status epilepticus** can develop during seizure activity. In this case, the seizure activity becomes continuous, with only very short periods of calm between intense and persistent seizures. The repetitive seizures may be of any type, although they are usually generalized tonic-clonic (Porth, 2002). Repeated seizures have a cumulative effect, producing muscular contractions that can interfere with respirations. The client is in great danger of developing hypoxia, acidosis, hypoglycemia, hyperthermia, and exhaustion if the convulsive activity is not halted. Status epilepticus is considered a life-threatening medical emergency that requires immediate treatment.

**Diagnostic Tests**

Diagnostic testing is performed to confirm the seizure diagnosis and to determine any treatable causes and precipitating factors. The tests include:

- **Complete neurologic exam** to determine the focal neurologic deficit or the focus or origin of seizure activity.
- **Electroencephalogram (EEG)** to help confirm the seizure diagnosis and localize any lesion(s). See the box on this page for the nursing implications of EEG.
- **Skull X-rays** to identify possible fractures, deformities in bony structures, or calcification.
- **MRI or CT scan** to determine the presence of a tumor, congenital lesions, edema, infarct, hemorrhage, arteriovenous malformation, or a structural deviation, such as ventricular enlargement.

**Nursing Implications for Diagnostic Tests**

**Electroencephalogram (EEG)**

An EEG is used to detect abnormal brain function. It provides a graphic record of the brain's electrical activity (brain waves) and is useful in evaluating seizure activity.

**Client Preparation**

- Explain the procedure, emphasizing the importance of cooperation.
- Withhold fluids, foods, and medications (as prescribed) that may stimulate or depress brain waves. These include anticonvulsants, tranquilizers, depressants, and caffeine-containing foods (e.g., coffee, tea, colas, and chocolate). Medications are usually withheld for 24 to 48 hours before the test.
- Help the client wash the hair before the test.

**Client and Family Teaching**

- The test takes about 1 hour.
- The test is painless and will be performed while sitting in a comfortable chair or lying on a stretcher.
- The electrodes are applied to the scalp with a thick paste.
- During the test, you will first be asked to breathe in and out deeply for a few minutes. Then, you will close your eyes while a light is flashed on them and, finally, you will lie quietly with your eyes closed.
- After the test, the nurse will help you wash the paste out of your hair.

- **Lumbar puncture** to determine the presence of infection (meningitis) or elevated protein levels in the CSF.
- **Blood studies** to assess blood count, electrolytes, blood urea, and blood glucose.
- **Electrocardiogram (ECG)** to rule out underlying cardiac dysrhythmias.

**Medications**

Anticonvulsant medications can reduce or control most seizure activity. These medications do not cure the disorder; they only manage its manifestations. Anticonvulsant medications generally act in one of two ways: by raising the seizure threshold or by limiting the spread of abnormal activity within the brain.

The goals of medications for epilepsy are to protect the client from harm and to reduce or prevent seizure activity without impairing cognitive function or producing undesirable side effects. Ideally, the lowest possible dose of a single medication that will control the client’s seizures is prescribed; often, however, several medications must be tried before the most effective is identified, and a combination of drugs may be needed to manage the client’s seizures. Therapy is individualized, based on the type of seizure activity and the client’s response to the medication. Nursing implications for these drugs are described in the Medication Administration box on the page 1369; drug interactions are listed in Box 42–2. The success rate is higher in clients with partial and secondary tonic-clonic seizures when carbamazepine (Tegretol), phenytoin (Dilantin), or valproic acid (Depakote) is used.