

Diagnostic evaluation for epilepsy patients



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It is critical for patients with new-onset seizures to be undergone a prompt diagnosis and an evaluation to determine the underlying etiology. Diagnostic tests also help determine the epilepsy syndrome diagnosis and help determine the prognosis for future seizure recurrence. After a detailed history is taken from the patient and any available collateral historians, investigation with EEG and neuroimaging is essential to consider in the evaluation of most patients presenting with seizures. Epilepsy is a clinical diagnosis that is often based on medical history alone as health care providers rarely personally observe the patient's seizure activity. EEG is the most important diagnostic tool that may assist in diagnosis, seizure classification, and monitoring response to treatment. Importantly, individuals with normal routine EEG recordings and recurrent seizures may be appropriate candidates for AED therapy. Video-EEG monitoring may be necessary to differentiate nonepileptic spells from seizures, to confirm seizure classification, and for identifying surgical candidates. The use of MRI protocols targeted for increasing the detection of these "invisible" lesions involves the improvement of structural imaging techniques and the combination of metabolic and functional studies, including 18F-FDG-PET, ictal single-photon emission computed tomography (SPECT), diffusion MRI, and magnetic resonance spectroscopy (MRS). At this talk, we will discuss the the initial investigational approaches to new-onset epilepsy are considered, including neuroimaging and neurophysiologic investigations with interictal and ictal video-EEG. Neurologists should maintain a high index of suspicion for epilepsy when new patients occur.