



Seizures Are the Main Sign of Epilepsy: Stages of Seizures

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To cite this article:

Gudisa Bereda. Seizures Are the Main Sign of Epilepsy: Stages of Seizures. *American Journal of Psychiatry and Neuroscience*. Vol. 7, No. 1, 2022, pp. 1-3. doi: 10.11648/j.plm.20230701.11

Received: December 9, 2022; **Accepted:** January 20, 2023; **Published:** February 4, 2023

Abstract: A common neurological condition known as epilepsy is characterized by recurrent bouts of uncontrollable body movements that affect only a portion of the body (partial) or the full body (generalized), occasionally accompanied by loss of consciousness and control over bowel or bladder function. Uncontrolled seizures are linked to medical and psychological illness, dependent behavior, a low quality of life, and a higher risk of untimely death. Epilepsy affects people of all ages, ethnicities, sexes, levels of education, socioeconomic status, and social classes worldwide. The prodrome phase is a pre-epileptic feeling or experience that might start hours, days, or even weeks in advance of the actual seizure. The most prevalent prodromal phase symptoms include difficulties maintaining focus, tension, exhaustion, sleep disruptions, behavioral changes (differently smelling, tasting, having ringing in the ears, feeling queasy, etc.), restlessness, and others. The ictal phase defined as spans the interval between the start of a seizure and its conclusion. The phrase "interictal" refers to a phase that occurs between seizures or headaches. "Postictal" refers to the period following a seizure. The duration of postictal phase varies from minutes to hours depending on the type of seizure, the frequency and intensity of seizures, and the length of the seizure.

Keywords: Ictal, Interictal, Preictal, Postictal, Seizures, Stages

1. Introduction

The term "epilepsy" is derived from the Greek word "epilepsia," which is divided into two parts: "epi" means "upon" and "lepsis" means to seize or have a seizure [1]. Epilepsy is a chronic neurologic disorder characterized by recurrent epileptic seizures caused by paroxysmal, uncontrolled neuronal discharges in the central nervous system [2, 3]. Epilepsy is the most common neurological disorder and is characterized by recurrent seizures due to abnormally excessive synchronous neuronal activity in the brain [4, 5]. The seizures can be correlated with characteristic clinical manifestations of abnormal, excessive, or synchronous neuronal activity in the brain [6, 7]. Epileptic seizures usually cause a transient impairment of consciousness, leaving the individual at risk of bodily injury and usually interfering with education and employment [8]. A seizure can cause motor, sensory, or autonomic symptoms, with or without altered consciousness [9]. Uncontrolled seizures are linked to physical and psychological illness, dependency, poor quality of life, and an increased risk of sudden and unexpected death [10]. Childhood, adolescent, and young adult epilepsy are associated

with congenital, developmental, and genetic factors [11]. Seizures are frequently a symptom of an underlying pathology that may be genetic, structural, or metabolic [12, 13]. Epilepsy affects people of all ages, ethnicities, sexes, levels of education, socioeconomic status, and social classes worldwide. It manifests as sporadic, repeated fits or seizures, which can cause loss of consciousness, impaired movement, muscle spasms, and impairment of the autonomic nervous system and brain processes [14, 15]. Among the symptoms associated with epilepsy were motor tingling, numbness, lip-smacking, convulsive jerking incoordination, dystonia, and chewing motions. Aura, auditory, gustatory, olfactory, visual, and vestibular abnormalities are sensory-paresthesia symptoms. Sweating, flushing, dilated pupils, and hallucinations, dysphasia of behavior Cognitive attention, memory impairment, and impaired responsiveness result from forced thinking [16–18]. The main intention of this mini review is to depict stages of seizures alongside their clinical manifestations.

2. Stages of Seizures

Based on how long a seizure lasts within the body, distinct phases of seizures have been identified. For measuring the

length of bodily seizures, the prefix "ictal" has been proposed [19, 20]. The following stages of seizures are explained one at a time:

2.1. Preictal or Prodrome (Aural) Stage

The prodrome phase is a pre-epileptic feeling or experience that might start hours, days, or even weeks in advance of the actual seizure. The most prevalent prodromal phase symptoms include difficulties maintaining focus, tension, exhaustion, sleep disruptions, behavioral changes (differently smelling, tasting, having ringing in the ears, feeling queasy, etc.), restlessness, and others. Since the prodrome is not a seizure, the aura and prodromal phase are not interchangeable. The preictal phase interval occurs before the body experiences a seizure. The prodromal stage might extend for hours, days, or even weeks depending on the individual's atypical behavior [20, 21–24].

2.2. Ictal Stage

The unquestionable durations of seizures are referred to as "ictal." The ictal phase spans the interval between the start of a seizure and its conclusion. The phrase "ictal" refers to a seizure. The typical clinical signs of an ictal phase include difficulty speaking, difficulty filling out sentences, loss of muscle control, hearing loss, irregular breathing, redundant movements, twitching, convulsions, and others. In essence, excessive neurotransmitter discharge in the central nervous system is what causes ictal-phase seizures. The ictal phase frequently results in severe alterations or movements that have a negative impact on life-threatening situations and can be seen in the electroencephalogram, metabolic rate, and cardiovascular system [20, 25–27].

2.3. Interictal Stage

The interval between seizures was known as the interictal phase. The phrase "interictal" refers to a phase that occurs between seizures or headaches. Weakness, neck discomfort, food cravings or nausea, sensitivity to light, mood swings, stress, and other symptoms are among the frequent clinical signs of interictal. People with seizures, primarily those with temporal lobe epilepsy, have emotional disturbances during the interictal phase. There are a variety of disturbances during this phase, ranging from mild fear to pathologically distinct anxiety and depression [20, 28, 29].

2.4. Postictal Stage

The postictal phase, also known as the end phase of epilepsy, is defined as the time period following a seizure during which the healing process is relaxed. "Postictal" refers to the period following a seizure. The duration of postictal phase varies from minutes to hours depending on the type of seizure, the frequency and intensity of seizures, and the length of the seizure. A postictal seizure can last for hours but typically lasts three to fifteen minutes. Fatigue, vomiting, trouble speaking, painful muscles, polydipsia, stress, headache, bladder loss, confusion, loss of consciousness,

fractured bones, and other symptoms are common clinical indications of the post-ictal period [30–32].

3. Conclusion

Any of the following conditions, such as i) at least two unprovoked (or reflex) seizures occurring more than 24 hours apart, ii) one unprovoked (or reflex) seizure, and iii) a probability of further seizures equal to the general recurrence risk, can be used to define epilepsy as a disease of the brain. The most prevalent neurological condition, epilepsy is characterized by recurring seizures brought on by abnormally high levels of synchronized neuronal activity in the brain. The unquestionable durations of seizures are referred to as ictal. The time between the onset and the end of a seizure is known as the ictal phase. The phrase "ictal" refers to a seizure. The typical clinical signs of an ictal phase include trouble speaking, difficulty finishing out sentences, lack of muscle control, hearing loss, irregular breathing, redundant motions, twitching, convulsions, and others. The postictal phase, also known as the end phase of epilepsy, is defined as the time period following a seizure during which the healing process is relaxed. "Postictal" refers to the period following a seizure.

Data Sources

Sources searched include Google Scholar, Research Gate, PubMed, and Cochrane database. Search terms included: stages of seizures.

Conflict Interests

The authors declare that they have no competing interests.

Acknowledgements

The author would be grateful to anonymous reviewers for the comments that increase the quality of this manuscript.

References

- [1] Esene O et al. An Overview of the Facts, Myths and Treatment of the Disease Condition Known as "Epilepsy". IOSR-JDMS; 2013; 6 (2): 07-19.
- [2] Bereda G. ILAE classification of seizures and antiepileptic medications apothegmatic: hereafter advancement and clinical practice. J Psychol Clin Psychiatry. 2022; 13 (1): 3–7.
- [3] Bereda G. Determination of the Factors Leading To Non Adherence with Anti-Epileptic Medication in Psychiatric Ambulatory Follow up Patients of Mettu Karl Referral Hospital, South Western, Ethiopia: A Prospective Cross Sectional Study. J Basic Clin Pharma. 2021; 12 (4): 51-56.
- [4] Shilpa B. N et al. Prescription pattern of anti-epileptic medications in a tertiary care centre. Indian Journal of Pharmacy and Pharmacology, January-March, 2018; 5 (1): 7-10.

- [5] Narwat A, Sharma V. Prescription pattern of antiepileptic drugs in indoor patients at tertiary care hospital in Haryana, India. *Int J Basic Clin Pharmacol* 2018; 7: 537-40.
- [6] Mukhopadhyay H. K et al. Epilepsy and its Management: A Review. *Journal of Pharma Sci Tech*; 2012; 1 (2): 20-26.
- [7] Fisher RS, Van Emde B, Blume W et al. Epileptic seizures and epilepsy: definition proposed by the International League Against Epilepsy (ILAE) and the International Bureau for Epilepsy (IBE). *Epilepsia* 2005; 46 (4): 470-72.
- [8] Epilepsy: A Manual for Physicians. World Health Organization. New Delhi: Regional Office for South-East Asia, 2004: 1.
- [9] Richa Rani, Rajiv Arora, Parshotam Dass Garg, Neeru Bala, N. S. Neki. (2018). Prevalence of psychiatric comorbidities among the patients of epilepsy attending general hospital psychiatric unit. *Int. J. Curr. Res. Med. Sci.* 4 (5): 90-96.
- [10] Mohammad Asif. 2016. A review on antiepileptic drug and their uses, mechanism of actions, adverse effects and drug interaction. *Current Science Perspectives* 2 (2) 19-38.
- [11] Koliqi R et al. Prevalence of Side Effects Treatment with Carbamazepine and Other Antiepileptics in Patients with Epilepsy. *Mater Sociomed.* 2015 Jun; 27 (3): 167-171.
- [12] Hosalli NK, Vasudevan MS, Jalageri MI. Study of clinical and etiological profile of new onset seizure in adults reporting to tertiary care centre, Mysore. *Int J Adv Med* 2022; 9: 322-9.
- [13] Madeeha Malik et al. The Burden of Epilepsy and Impact of Anti-Epileptic Medications on Cognition and Psychomotor Functioning: A Literature Review. *Indo American Journal of Pharmaceutical Research.* 2019; 9 (08).
- [14] Waheed A, Pathak S, Mirza R; Epilepsy: A brief review; *Pharma Tutor*; 2016; 4 (9); 21-28.
- [15] Senthil Amudhan, Gopalkrishna Gururaj, Parthasarathy Satishchandra Ann Indian Acad Neurol. Epilepsy in India I: Epidemiology and public health, 2015 Jul-Sep; 18 (3): 263-277.
- [16] Andhi N et al. An Observational Study: To Assess The Therapeutic Outcome And Prevalence Of Neurological Psychological And Cognitive Effects In Patients Taking Antiepileptic Medication. 2022; 8 (5): 13-23.
- [17] Mandal S et al. A drug utilization study of antiepileptic drugs uses in a tertiary care teaching hospital of India. *Int J Basic ClinPharmacol.* 2021 Nov; 10 (11): 1293-1296.
- [18] Potnis VV, Albhar KG, Nanaware PA, Pote VS, A Review on Epilepsy and its Management, *Journal of Drug Delivery and Therapeutics.* 2020; 10 (3): 273-279.
- [19] Deepan M et al. Relationship between antiepileptic medications and type of seizures. *International Journal of Paediatrics and Geriatrics* 2020; 3 (2): 65-66.
- [20] Tiglani D, Salahuddin, Mazumder A, Kumar R, Sharma PK and Pateriya K. "A comprehensive review on epilepsy". *International Journal of Recent Research in Pharmacy (IJRRP)*, 2020; 1 (2B), pp. 01-06.
- [21] Meenakshi B. An analysis of prescription pattern and adverse drug reaction profile in children treated with antiepileptic drugs in a tertiary care teaching hospital. *Int J Basic Clin Pharmacol.* 2016; 5 (2): 389-93.
- [22] Yuen AW, Keezer MR and Sander JW. "Epilepsy is a neurological and a systemic disorder". *Epilepsy & Behavior (EB).* 2018; 78, pp. 57-61.
- [23] Gandhi L and Akhtar MS. "Formulation and characterization of mouth dissolving tablet of antiepileptic drug using natural superdisintegrants". *Journal of Drug Delivery and Therapeutics (JDDT)*, 2019; 9 (3-s), pp. 673-8.
- [24] Patel, R. S., Elmaadawi, A., Mansuri, Z., Kaur, M., Shah, K., & Nasr, S. (2017). Psychiatric Comorbidities and Outcomes in Epilepsy Patients: An Insight from a Nationwide Inpatient Analysis in the United States. *Cureus*, 2017; 9 (9): e1686.
- [25] Sachchidanand Pathak, Lalit Singh, Tanuja Singh, S. K. Sharma, "Prescribing patterns of Anti-epileptic drug in different age group in India". *Journal of Drug Discovery and Therapeutics*; 2013, 1 (7), 69-75.
- [26] Marite N et al. A prospective study: Drug utilization evaluation of anti-epileptic drugs in a multispecialty hospital. *The Pharma Innovation Journal* 2019; 8 (5): 639-646.
- [27] Sheikh NA, Nasreena Shabnum2, Gulzar A. Bhat1, Atif Kawoosa1, Mudasir Mushtaq1, Mushtaq A. Wani. Etiological profile of adult onset seizures: a hospital based prospective study from Kashmir, India. *Int J Adv Med.* 2017; 4 (3): 793-8.
- [28] Chalasani S, Kumar MR. Clinical profile and etiological evaluation of new onset seizures after age 20 years. *Int J Adv Med.* 2017; 4 (2): 901-8.
- [29] Kariuki, S. M., et al., Prevalence, causes, and behavioral and emotional comorbidities of acute symptomatic seizures in Africa: A critical review. *Epilepsia Open*, 2017. 2 (1): p. 8-19.
- [30] Newale S, Bachani DS. Demographic characteristics of epilepsy patients and antiepileptic drug utilization in adult patients: Results of a cross-sectional survey. *Neurol India.* 2016; 64: 1180-6.
- [31] Yusuke Okubo, Atsuhiko Handa, Hiroki Nariai: National survey of factors associated with repeated admissions due to febrile seizure. *Seizure- European journal of Epilepsy*, 2018; 61: 149-152.
- [32] Guyton AC, Hall JE. Text book of medical physiology.; Elsevier a division of Reed Elsevier India (P) Ltd, 11th ed. 2007: 743-47.