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# A Case Study of Respiratory Insufficiency in a Seizure Patient

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## Abstract

Two major conditions that occur when an event of respiratory insufficiency happens are hypercapnia and hypoxia. These events basically cause the neurological manifestations that are seen in patients with respiratory insufficiency. Acute phase of respiratory insufficiency sometimes happens in people with non-diseased lungs. However chronic insufficiency can be occur in patients who are extremely obese, have musculoskeletal abnormalities (especially with extra-pulmonary muscles), neuromuscular disease and intrinsic disorders of the lungs (Schachter, 2004). Seizures are neurological conditions that occur in patients due to alteration in the normal mechanism through which impulses are sent and transmitted in the brain. Seizures in some cases are caused due to metabolic alterations that may have developed in cases of chronic disease conditions and at times due to medications used in patient care (such as antibiotics, antivirals, etc.) (Aydin et al., 2020). However, majority of seizures are caused secondarily to structural defect to the brain due systemic disease or injury to the brain. Electroencephalography (EEG) is the major tool used in diagnosis of seizure and it can also show event of respiratory insufficiency through diffuse slowing of the waves when there is no other metabolic encephalopathy noted. According to Schchter (2004), there are two main factors that make seizure a possible complication of respiratory insufficiency. These are severe prolonged hypoxia and acute hypercapnia.

#### Case Study

Patient is a 72 years old man who presented to the emergency department with history of recurrent generalized tonic clonic (GTC) seizures with postictal duration of less than one hour. He came in with encephalopathy due to cerebral infection. A 24 hour EEG done on him showed in the first one hour that he had a classical GTC seizure. More so, cardiac monitored showed patient desaturates and had tachycardia during every event. His oxygen saturation goes as low as 82%. Following these events, patient was placed on 5 liters oxygen supply and this was helpful because during patient's episodes, the least his saturation now goes was 93%.

#### Conclusion

During seizure, especially GTC, patient's saturation can go very much below the normal range. This in most cases is because the seizure type might affect patient's respiratory muscles thus affect oxygen saturation of their tissues. Another factor that have been proposed to cause this is possible aspiration from the patient during an event. It is therefore pertinent that a seizure patient is predisposed to possible respiratory support system, especially when then come in for a study.

## **Biography**

Emmanuel Orji is a Respiratory Therapyist and a highly motivated and result oriented individual with proven skills in Electrophysiology (EEG, VEEG-LTM, EMG, NCS, EP), Respiratory Medicine, Health Education and Healthcare Management. Other areas of interest include clinical neurosciences, public health and academics. He is looking for career opportunities in electrophysiology, clinical neurosciences, respiratory medicine, research and the academia.