Case Report

Nepal Journal of Neuroscience 2025;22(1): 48-49

Encephalopathy with periodic discharges in chronic kidney disease patient : A case Report

Abraham Miny[1], Gladson Nikhil[2]

[1] Consultant Neurologist- Department of Neurology, Tiruvalla Medical Mission Hospital, Thiruvalla, Kerala

[2] Head of Department and Consultant Neurologist, Tiruvalla Medical Mission Hospital, Thiruvalla, Kerala

Date of Submission: 31st October 2024 Date of Acceptance: 20th February 2025 Date of Publication: 15th May 2025

Abstract

Analysis of spontaneous EEG activity is an essential method in evaluation of patients with impaired consciousness in both acute care and chronic settings. It continues to be the only method that allows the bedside monitoring of both immediate and longterm cortical functioning associated with the conscious or unconscious state.We report two cases of encephalopathy with periodic discharges in chronic kidney disease patients;

Key Words : Encephalopathy , Periodic Discharges ,ICU EEG

Introduction

The diagnosis of seizures in the critical care ICU is a matter of much attention because they are common (found in 10% to 25% of patients recorded),represent a potentially reversible cause of encephalopathy or coma and are associated with poor outcome.[1] High frequency of seizures have been observed in critically ill patients with a wide range of acute medical and neurological conditions . Early detection and timely intervention is required to minimize both direct and indirect neurological and medical complications . EEG has been validated as a diagnostic biomarker of covert consciousness, a predictive biomarker of cerebral ischemia and impending neurologic deterioration, and a prognostic biomarker of coma recovery and status epilepticus resolution[2]. There may be clinical or subclinical seizures with reduced sensorium with EEG correlation .EEG findings may include periodic discharges , epileptiform patterns fitting the criteria of Non convulsive status[1] (based on frequency and evolution of epileptiform discharges) and spectrum of ictal interictal continuum

Access this article online

Website: https://www.nepjol.info/index.php/NJN

DOI: 10.3126/njn.v22i1.59585

HOW TO CITE
Abraham M. Encephalopathy with Periodic Discharges In chronic Kidney Disease Patient.NJNS. 2025;22(1):48-49

Address for correspondence:
Dr. Miny Susan Abraham
Consultant Neurologist
Department of Neurology Tiruvalla Medical Mission Hospital,
Thiruvalla, Kerala
Email: minysusanabraham86@gmail.com

ISSN: 1813-1948 (Print), 1813-1956 (Online)

Case Report

Elderly patients with chronic kidney disease presented with altered sensorium of 2 days duration .Metabolic profile (except for deranged renal function). Imaging , Cerebrospinal fluid study were normal .ICU EEG monitoring was done and shown Fig1 and Fig 2

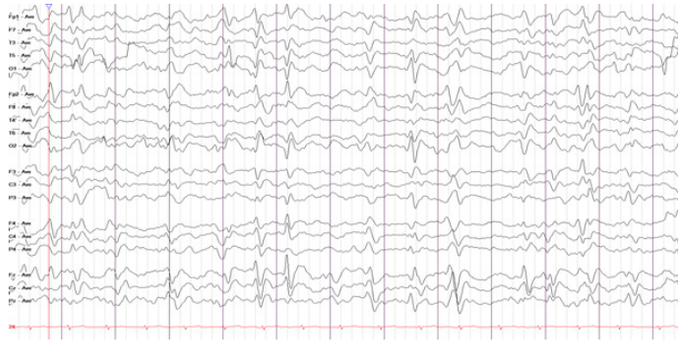

Figure 1: EEG in 75 year old male patient ,Referential Montage Showing Nearly Generalised Periodic discharges , Occasional bilateral independent discharges .

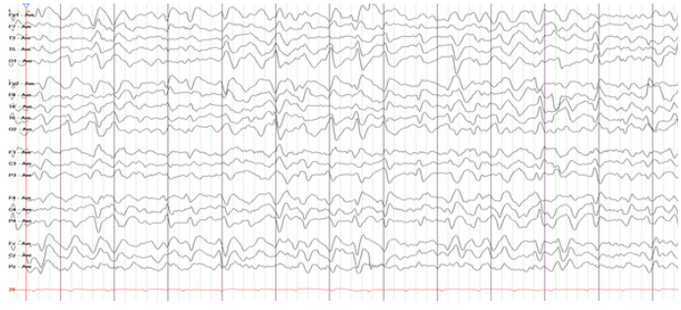

Figure 2: EEG in 83 year old female showing multifocal epileptiform discharges in a nearly periodic fashion

There were no seizures clinically .Hence encephalopathy secondary to possible non convulsive status /ictal inter continuum was considered Reviewing the clinical history revealed recent baclofen use for intractable hiccoughs. Patient sensorium inproved and EEG got normalised 4-5 days after stopping baclofen .

DISCUSSION

Continous EEG monitoring in ICU may help in diagnosing the aetiology of encephalopathy or Non Convulsive status in critically ill patients with impaired consciousness .The above case was suggestive of baclofen induced Encephalopathy [3].Its well described in literature even at cumulative dose of 7.5 mg in chronic kidney disease patients . Baclofen gets absorbed well in the gastrointestinal tract producing the determined therapeutic levels of 80–400 ng/mL . The primary excretion is through the kidney (70–80%) . Only a small proportion usually crossess the blood brain barrier,producing the desired effects. The half-life is approximately 6.8 hours . Patients with decreased renal function have an extended half-life with more crossing of the blood brain barrier.ICU EEG monitoring enables diagnosis , risk stratification and prognostication of critically ill patients . Compared with all the different neuroimaging techniques EEG recordings are more widely available less costly, and in a suitable manner that gives direct and immediate information. But limits and misinterpretations can occur due to preexisting cranial defects because of accidents or surgeries ,or due to the presence of various kinds of artifacts in the ICU environment[4].

Conclusion

ICU EEG monitoring is relatively less expensive tool in monitoring cerebral function in real time in critically ill neurology patients . Utility of EEG monitoring may lead to increased awareness and diagnosis of subtle seizures , non convulsive status epilepticus in ICU patients and have an

1. Seizures, status epilepticus, and continuous eeg in the intensive care unit : Eric S. Rosenthal, MD. Continuum (MinneapMinn). October 2021; 27 (5 Neurocritical Care):1321–1343. 10.1212/CON.0000000000001012

2. Prevalence of non-convulsive seizure and other electroencephalographic abnormalities in ED patients with altered mental status: Zehtabchi S, Abdel Baki SG, Omurtag A, Sinert R, Chari G, American Journal Of Emergency Medicine .2013 10.1016/j.ajem.2013.08.002

3 Single low dose baclofen induced encephalopathy in patient with renal failure: Rabia Muddassir, Abdelrahman Idris, Bashaer Alharbi, Murouj Almaghrabi, Abdulaziz al-Ghamdi, Sayed ,Shakeel Ur Rahman Case report with literature Review .International Journal Of Neurology Research doi.org/10.1016/j.jns.2021.118612

4. The probability of seizures during EEG monitoring in critically ill adults : M. Brandon Westover, Mouhsin M. Shafi , Matt T. Bianchi Clinical Neurophysiology 126 (2015) 463–471. 10.1016/j.clinph.2014.05.037