



CASE REPORT ON NEUROLOGICAL MANIFESTATIONS OF H1N1 VIRAL ENCEPHALITIS

General Medicine

Hannah Elizabeth Sabu

Pharm D, Nazareth College of Pharmacy, Othara, Thiruvalla.

Dr. Joshua Kuruvilla Mathew

Clinical Pharmacist, Department of General Medicine, Believers Church Medical College Hospital, Thiruvalla, Kerala.

Dr. Thomas Jacob

Assistant Professor, Department of General Medicine, Believers Church Medical College Hospital, Thiruvalla, Kerala.

Dr. Mohan Varghese

Consultant Physician and Associate Professor, Department of General Medicine, Believers Church Medical College Hospital, Thiruvalla, Kerala.

ABSTRACT

The H1N1 epidemic has been accompanied by reports of central nervous system (CNS) impairments. CNS complications of influenza A infection include encephalitis, encephalopathy etc. We report a case of encephalitis diagnosed with the H1N1 virus infection.

KEYWORDS

H1N1 virus, Encephalitis

INTRODUCTION

Influenza is a highly contagious disease caused by RNA viruses of the family *Orthomyxoviridae*. Influenza has been accompanied with many cases of encephalitis and encephalopathy.⁽¹⁾

The diagnosis of encephalitis/encephalopathy was made on the basis of all clinical signs. All of the patients either lost consciousness or had altered consciousness.⁽²⁾

There is no mechanism that can account for the emergence of influenza's neurological side effects. The cytokine storm theory, influenza virus invasion of the central nervous system, postinfection immune-mediated mechanism, genetic factors, and RANBP2 gene alterations are a few theories.

To confirm influenza encephalopathy or encephalitis at the time of initial presentation, blood, CSF analysis, influenza RNA in nasopharynx samples and CSF, EEG, computed tomography (CT), and MRI should be done. Influenza is mostly treated with antiviral drugs such as oseltamivir, zanamivir, and rimantadine. Although the precise method by which antiviral therapy works to treat neurological problems is unknown, it is believed that these medications reduce viral expression, which in turn reduces the inflammatory response.⁽³⁾

CASE REPORT

A 63 year old man presented to the Emergency Department with a history of fever and headache for one week which was continuous. He was taken to a nearby hospital and was given medication for the same. The next morning he became restless with altered behavior, reduced food intake and urine output. He was admitted to the Intensive Care Unit where they noticed occasional abnormal jerky movements. Hence he was referred to our hospital for further evaluation and management. On examination, the patient was agitated and had complaints of lip smacking, bilateral cerebellar signs and wide based gait. Blood investigations showed elevated total counts with polymorphic predominance and elevated CRP. His urea and creatinine levels were elevated. CT brain scans showed no evidence of acute infarct / hemorrhage, age related neuroparenchymal atrophy and chronic small vessel ischemic changes. He was initiated on IV antibiotics (INJ CEFTRIAXONE) antivirals (INJ ACYCLOVIR) antiepileptics (INJ LEVIPIL) and other supportive measures. CPK done was elevated (9406.6), Leptospira IgM, Scrub Typhus IgM and Dengue IgM done were negative. Lumbar Puncture study was done which was within normal limits. MRI brain was done which showed no evidence of acute infarct or intracranial hemorrhage, no features of meningoencephalitis. Neurology consultation was sought in view of B/L cerebellar signs, lip smacking, wide based gait and advised conservative management. H1N1 throat swab qualitative PCR turned out positive, and hence he was started on T.Oseltamivir and all other antibiotics were stopped. During the course of hospital stay his

neurological symptoms resolved, became symptomatically better and hemodynamically stable hence he was discharged.

DISCUSSION

Influenza-associated encephalopathy is generally described as a rapidly progressive encephalopathy that manifests early in the course of influenza illness, most frequently in children under the age of five, and is linked to high morbidity and mortality.⁽⁴⁾

Neurological symptoms of encephalitis include headache, stiff neck, mental confusion and seizures. Prompt diagnosis, early initiation of antiviral therapy, and supportive care are mainstays of preventing complications and early recovery.

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CONFLICT OF INTEREST

The authors declared that there is no conflict of interest.

ABBREVIATIONS

CNS - Central Nervous System

H1N1- Hemagglutinin and neuraminidase (H1 through H18 and N1 through N11)

RANBP2- Ran binding protein 2

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