

Anti-NMDA Receptor Encephalitis in Female: A Case Report in Bangladesh

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Abstract

Background: Anti-N-methyl-D-aspartate (NMDA) receptor encephalitis is an autoimmune disease in which IgG antibodies are directed against the NMDA receptor. It is characterized by symptoms of psychiatric, neurological and autonomic disturbances and has been identified in young patients with first onset psychiatric symptoms; mostly in female; may or may not be associated with ovarian teratoma. It was aimed at reporting a case to raise the consideration of the differential as well as to open the horizon in a country like Bangladesh.

Case: Mrs. NA, 23 years old female, married, presented with the complaints of undue suspiciousness, irrelevant talking, reduce social interaction and self-care, sudden episodic aggressive outburst, sleep disturbance, reduce appetite, disinhibited sexual behavior expressed, convulsion, and cognitive disturbances after being cured from flu like symptoms. After repeated consultation, she is diagnosed as a case of NMDA receptor antibody encephalitis based on the laboratory report. Currently she is getting tablet Mycophenolate Mofetil (1500 mg in divided dose) with good functioning status.

Conclusion: Anti-NMDA receptor antibody encephalitis can be misdiagnosed and high index of suspicion is needed. Multidisciplinary team approach backed by consideration of the encephalitis as a differential will help to diagnose earlier.

Keywords: NMDA Encephalitis; First Episode Psychosis; Bangladesh

Abbreviation

NMDA: N-Methyl-D-Aspartate; EEG: Electroencephalogram; GTCS: Generalized Tonic Clonic Seizure; ICU: Intensive Care Unit

Introduction

Anti-N-methyl-D-aspartate (NMDA) receptor encephalitis is an autoimmune disease that was identified in 2007, and since the characterization, a rapidly growing literature has described many aspects of the disorder [1-4]. It is a severe form of encephalitis in which IgG antibodies are directed against the NMDA receptor, has been identified in young patients with first-onset psychiatric symptoms; occurs in both male and female but mostly in female; may or may not be associated with ovarian teratoma [1-4,6-10]. It is characterized by symptoms in a stepwise manner with psychiatric, neurological and autonomic disturbances and clinical presentation includes three main stages: (1) an initial period with viral prodrome and flu like symptoms including headache, fever, nausea, vomiting, diarrhea, or upper respiratory-tract symptoms that can last up to 1 - 2 weeks; (2) an intermediate stage, that can last from 1 to 3 weeks, mainly with psychiatric symptoms such as delusions, hallucinations, mania, agitation, catatonia, sexual disinhibition, short-term memory loss, emotional

disturbances, and speech abnormalities (e.g., reduced verbal output, frank mutism, and echolalia) and disorganization (often seizures); and (3) prominent neurological symptoms, such as movement abnormalities as orofacial dyskinesias, dystonic posturing, and choreic-like movements of limbs, dysautonomia characterized most frequently by hyperthermia, tachycardia, hypersalivation, hypertension, bradycardia, hypotension, urinary incontinence, and erectile dysfunction, impaired consciousness, hypoventilation and seizures that can last from weeks to months, with possible need for intensive care unit support [1-4,6-11]. Anti-NMDA receptor encephalitis is a serious and fatal disease if left untreated and usually, psychiatrists are the first physicians to attend these patients because of the prominent behavioral symptoms, mood changes, and psychotic symptoms [1]. However, this form of encephalitis is important to psychiatrists because of the possibility of misdiagnosis as schizophrenia and being treated only symptomatically [12,13]. It was aimed at reporting the case to raise the consideration of the differential as well as to open the horizon in a country like Bangladesh.

Case Report

Mrs. NA, 23 years old female, married, hailing from urban background presented with the complaints of undue suspiciousness, irrelevant talking, reduce social interaction and self-care, sudden episodic aggressive outburst, sleep disturbance, reduce appetite, disinhibited sexual behavior expressed as staying nude, and convulsion 2 years back. The symptoms appear gradually after resolving flu like symptoms such as Headache, Malaise, feverish, weakness for approximately 2 weeks. She consulted both neurologist and psychiatrist for her symptoms and routine investigations including Electroencephalogram (EEG), MRI of Brain revealed nothing contributory. Initially she was treated with Levetiracetam, Risperidone and Procyclidine and she was responded with the medications and became functioning again. Six months back she suddenly developed Generalized Tonic Clonic Seizure (GTCS) followed by status epilepticus. She was transferred to Intensive Care Unit (ICU) and managed symptomatically and routine investigation revealed nothing significant towards the etiology. Then she gradually develops features of cognitive impairment like forgetfulness, lack of concentration, difficulty in writing, and altered level of consciousness. Then, thorough investigations were performed including Hepatitis and HIV virus panels, CA 19, Beta HCG but again revealed nothing significant. Then, fortunately, the clinicians looked for NMDA receptor auto antibody and that revealed NMDAR positive. Subsequently clinicians performed MRI of pelvis that revealed normal finding and excludes ovarian teratoma. Following evaluation of her state she has been diagnosed as a case of NMDA receptor antibody encephalitis based on the laboratory report. Currently she is getting tablet Mycophenolate Mofetil (1500 mg in divided dose) with good functioning status. Ethical issues are maintained accordingly and written informed consent is taken to publication of the report.

Discussion

It was aimed to raise the consideration of search for alternative diagnosis in patients presented with florid psychotic symptoms with behavioral disturbances and prominent cognitive disturbances in a country like Bangladesh. The reported female patients having 23 years of age presented with psychotic symptoms such as undue suspiciousness, irrelevant talking, reduce social interaction and self-care, sudden episodic aggressive outburst, sleep disturbance, reduce appetite, disinhibited sexual behavior; marked cognitive disturbances like forgetfulness, lack of concentration, difficulty in writing, and altered level of consciousness; and prominent neurological symptoms such as GTCS followed by status epilepticus. Moreover, the symptoms appeared after flu like symptoms for 2 weeks. The picture typically suggests the Anti-NMDA encephalitis as mentioned in the previous literatures [1-4,6-11]. Here, the possibilities of teratoma were excluded, but previous reports suggest that it may or may not be associated with teratomas and more prominent in female [1,3,4,8-10]. Further reports also revealed that the age of patients ranges as 18 - 35 years [3,4]. As there is variation in symptom presentation with prominent psychotic features and behavior disturbances, usually psychiatrists attend the cases and this form of encephalitis is important to psychiatrists because of the possibility of misdiagnosis as schizophrenia [1,12]. Reviews revealed that Anti-NMDAR antibodies have been detected in 6.5% of patients presenting with first episode psychosis, some of whom meet diagnostic criteria for schizophrenia [9,13]. So, multidisciplinary teams such as psychiatrists, neurologists, and other emergency room physicians need to become aware of anti-NMDA-R encephalitis [10,13]. The acute onset of severe atypical psychiatric symptoms in young female patients should raise the index of suspicion for anti-NMDA receptor encephalitis, particularly in the setting of neurological symptoms and high index of suspicion is needed to diag-

nose it [5]. Some authors recommend, NMDA receptor autoantibody screening for all patients with the acute onset of a severe psychiatric illness comorbid with neurological symptoms, including seizures, decreased consciousness, dyskinesia, or overt motor symptoms and in the patients with first episode psychosis in post-partum [5].

Conclusion

Anti-NMDA receptor antibody encephalitis can be misdiagnosed and high index of suspicion is needed. Young female with psychotic symptoms, behavioral disturbances, cognitive alteration, and dysautonomia can be the ideal candidate for it. Multidisciplinary team approach backed by consideration of the encephalitis as a differential will help to diagnose earlier.

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