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Other Mental Disorders YDT due to Brain Damage and Dysfunction and Physical Disease in Patients with Anti-NMDA Encephalitis: Case report

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Abstract---Autoimmune encephalitis (AIE) is considered one of the most common causes of acute noninfectious encephalitis. Autoimmune encephalitis is usually of acute or subacute onset and may become chronic later. Suggested mechanisms that may trigger AIE include tumour (paraneoplastic), infection (parainfection) or maybe cryptogenic. Autoimmune encephalitis has a wide range of clinical manifestations including behavioural and psychiatric symptoms, autonomic disorders, movement disorders and seizures. In this Case Report 13-year-old boy, Hindu, the Balinese, currently attending junior high school, unmarried, student. The patient was consulted by the psychiatry department while in the Cempaka room because he looked restless and confused. The patient experienced mood swings in the form of an unstable mood, accompanied by irritability, difficulty calming down, feeling uncomfortable, disturbed sleep, and decreased appetite after the patient underwent treatment at the hospital last February. On physical examination, physical status was found within normal limits, nutritional status was good, and general status was within normal limits. Examination of psychiatric status found an unnatural appearance that looked confused and uncomfortable, verbal and visual contact was lacking, clear consciousness, mood and affect were labile, in thought processes, there was a preoccupation with the disease, and in perception, there were visual hallucinations. There was mixed insomnia and hypobulia, and calm psychomotor on examination. Mechanism of self-defence repression and acting out. Examination using the Positive and Negative Syndrome Scale (PANSS-EC) obtained a score of 4 which means there is moderate.

Keywords---Autoimmune Encephalitis (AIE), brain and physical disease, case report, mental disorders YDT.

Introduction

NMDA anti-receptor encephalitis is a type of autoimmune encephalitis that attacks the NR1 subunit of the NMDA receptor on the cell membrane of neurons. Approximately 70-80% of encephalitis patients are women, especially children (40%) or young adolescents. N-methyl-D-aspartate anti-receptor encephalitis (NMDA) was first reported in 2005 by Vitalini et al. In addition, reports of similar cases are also increasingly appearing. This disease also contributes to a 4% cause of encephalitis in general (Chapman & Vause, 2020).

This disease is rare, making the diagnosis of autoimmune encephalitis, particularly NMDA anti-receptor encephalitis, a challenge in itself. Symptoms of psychosis and seizures in this disease are often diagnosed early as a psychiatric disorder or symptomatic epilepsy resulting in misdiagnosis (Adang et al., 2014). Delay in disease diagnosis has an impact on the potential for post-therapy sequelae and increased morbidity and mortality (25% of cases). In addition, the examination of anti-NMDA receptor antibodies as the gold standard examination is still not available in Indonesia (Blum et al., 2020).

The recent discovery of anti-NMDAR encephalitis, because its occurrence continues indefinitely. However, based on recent studies, there is an increasing number of cases reported worldwide, and it is possible to suspect that it is a relatively frequent entity (Chen et al., 2021). A prospective multicenter study conducted in the UK identified 203 patients with encephalitis due to various causes, most notably anti-NMDAR encephalitis was the second most common etiologic encephalitis (after encephalitis having the primary disseminated disease) by anticuerpo. In September 2007 and February 2011, the California Encephalitis Project evaluated 716 patients diagnosed with encephalitis. In cases with an identified aetiology, anti-NMDA encephalitis was the most common form, including enterovirus, simple herpes virus-1, varicella zoster virus and Nile Wes virus (Servén et al., 2021).

Autoimmune encephalitis develops due to IgG formation and attachment to the NMDA receptor subunit (NR1) as well as NMDA receptor (glutamate) internalization, reduced Ca influx, and decreased receptor-dependent synaptic current. But after IgG and receptor binding, complement-mediated destruction of the receptor does not occur. In some patients, antibody production is triggered by an associated ovarian teratoma and rarely other tumours (Zeng et al., 2019; Seery et al., 2022). Viral encephalitis, particularly Herpes Simplex Virus encephalitis, may correlate with the production of NMDAR antibodies over the next three weeks with the subsequent development of autoimmune encephalitis (Stahl, 2013). In some cases, the exact aetiology of antibody production remains unknown, but intrathecal plasma cells continue to produce antibodies with manifestations of the disease phenotype (Hinkle et al., 2016; Creten et al., 2011).

Prodromal symptoms found in 70% of patients, can be cephalgia, fever mild, nausea and vomiting, diarrhea, lethargy, myalgia and/or symptoms of upper respiratory tract infection (Wang et al., 2021). Psychiatric symptoms include psychosis (agitation and fear, paranoia, sleep disturbances, grandiose delusions, overly religious nature, mood lability), as well as speech and language disorders in the form of decreased speech frequency, echolalia, and/or echopraxia, to mutism unrelated to cortical aphasia (Sagar et al., 2020). There are also symptoms of withdrawal from social life and stereotyped behavior that appear within a few days (mean 5 days, generally less than 2 weeks). In children, the symptoms of psychosis are less dominant, while the symptoms of speech disorders are quite often found (Kim et al., 2021; Etemadifar et al., 2022).

Therapy can take up to several months to achieve a maximal therapeutic effect and can be discontinued after significant clinical improvement is observed, which is usually followed by a decrease in CSF and serum NMDA anti-receptor antibody concentrations (Ansseau et al., 2004; Merikangas et al., 2011). Recommended antipsychotic therapy for psychotic symptoms in this disease include quetiapine (for agitation and psychotic symptoms), Thorazine (for acute conditions requiring intravenous therapy), and valproic acid (for mood-related symptoms). The use of haloperidol is not recommended because it can obscure the symptoms of NMDA anti-receptor encephalitis with malignant neuroleptic syndrome (Kong 2019). Likewise, the use of dopamine antagonists is not recommended because it can cause exacerbation of dyskinesia and dystonia. The efficacy of using benzodiazepines in the form of lorazepam up to 20-30 mg or electroconvulsive therapy (ECT) to treat symptoms of catatonia is not yet known (Chen et al., 2021; Wang et al., (2022). To treat symptoms of sleep disorders, clonidine, Trazadone, and benzodiazepines are often used (Suwarba, 2020).

Case Report

The patient is a 13-year-old boy, Hindu, Balinese, currently attending junior high school, unmarried, student. The patient was consulted by the psychiatry department while in the Cempaka room because he looked restless and confused. The patient experienced mood swings in the form of an unstable mood, accompanied by irritability, difficulty calming down, feeling uncomfortable, disturbed sleep, and decreased appetite after the patient underwent treatment at the hospital last February. On physical examination, physical status was found within normal limits, nutritional status was good, and general status was within normal limits. Examination of psychiatric status found an unnatural appearance that looked confused and uncomfortable, verbal and visual contact was lacking, clear consciousness, mood and affect were labile, in thought processes, there was the preoccupation with the disease, and in perception, there were visual hallucinations. There was mixed insomnia and hypobulia, and calm psychomotor on examination. Mechanism of self-defence repression and acting out

Examination using the Positive and Negative Syndrome Scale (PANSS-EC) obtained a score of 4 which means there is moderate. There is a decrease in intellectual function and memory, disturbances in speech and language, disorientation in space, time, and people, motor disturbances, and emotions and feelings become unstable altered and distorted personality with acute onset (Batara et al., 2022).

There are the following symptoms that occur in patients who have currently experienced the disease Anti-NMDA Encephalitis which is a type of autoimmune disease that attacks the brain where this affects the development of the underlying disease. The patient suddenly experiences a disturbance of consciousness that occurs simultaneously with disturbances in attention, perception, thought processes, memory, psychomotor behavior, emotions and sleep cycles, so that for now it meets the criteria for the diagnosis of Other Mental Disorders YDT Due to Brain Damage and Dysfunction and Physical Illness (Khidoyatova et al., 2022). The symptom causes distress or impairment in social, occupational, or other clinically significant areas of functioning. The disturbance is not a physiological consequence of substance use or another medical condition. Then, from the generalist status examination, no abnormalities were found. PK laboratory results Anti-NMDA: February 15, 2022: Positive

In this case, the patient experienced mood swings in the form of an unstable mood, accompanied by easy anxiety and confusion, difficulty calming down, feeling confused, disturbed sleep, and decreased appetite that was experienced after the patient to the criteria for the Classification Guidelines for the Diagnosis of Mental Disorders III which meet the YDT criteria for the diagnosis of Other Mental Disorders Due to Brain Damage and Dysfunction and Physical Disease so that this diagnosis is considered as the main diagnosis. The patient was given pharmacological therapy with 0.5 milligrams of Haloperidol every 24 hours intraorally (morning) and Clobazam 5 milligram Haloperidol every 24 hours intraorally (Night), while the non-pharmacological therapy given was supportive psychotherapy and family psychoeducation.

Discussion

The patient is a 13-year-old boy, Hindu, Balinese, currently attending junior high school, unmarried, student. The patient was consulted by the psychiatry department while in the Cempaka room because of anxiety and hallucinations. The patient experienced mood swings in the form of an unstable mood, accompanied by restlessness, difficulty in calming, feeling confused, disturbed sleep, and decreased appetite which was experienced after the patient underwent treatment at the last hospital. On physical examination, physical status was found within normal limits, nutritional status was good, and general status was within normal limits. Examination of the psychiatric status found an unnatural appearance, looked confused, lacked verbal and visual contact, fluctuating awareness, mood and affect was labile, in thought processes, there was the preoccupation with the disease, a history of screaming, on perception, visual hallucinations were obtained. There is insomnia, mixed type insomnia, a history of raftus, and calm psychomotor on examination. Mechanism of self-defence repression and acting out. Examination using a positive and negative syndrome scale (PANSS Ec) obtained a score of 4 which means there is moderate agitation. PK laboratory results in Anti-NMDA: February 15, 2022: positive. This causes the patient to be given pharmacological and non-pharmacological therapy. The patient was given pharmacological therapy with 0.5 milligrams of Haloperidol every 24 hours intraorally (morning) and Clobazam 5 milligram Haloperidol every 24 hours intraorally (Night). Meanwhile, the non-pharmacological therapy provided is supportive psychotherapy and cognitive psychotherapy. The patient's family was also given psychoeducation.

Conclusion

Based on the psychodynamic analysis, there were several biologic factors found in this patient, such as positive results on the examination of anti-NMDAR antibodies in serum or cerebrospinal fluid. These biological factors make the patient nervous and lead to maladaptive behavior. From a psychological point of view, the patient feels that his parents are different. He needs affectionate attention from his parents and the nuclear family. From a social perspective, the patient begins to feel uncomfortable when he cannot go to school and play with his friends. He was worried that he would not be able to chat and play with his friends again. In this case report, it can be concluded that YDT and Other Mental Disorders Due to Brain Damage and Dysfunction and Physical Diseases caused by Anti-NMDA encephalitis in children need to be treated appropriately. Treatment should consist of pharmacological and non-pharmacological therapies.

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Conflict of interest: There is no other party's interest.

Ethical approval: Not required

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