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PSYCHOTHERAPEUTIC MANAGEMENT FOR GAMMA-AMINOBUTYRIC ACID (GABA) ENCEPHALITIS: A CASE REPORT

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ABSTRACT

Encephalitis with unknown etiologies and an uncontrolled seizure pose challenges for effective management. This paper reports on the management of a case of depression and severe cognitive impairment post-acute encephalitis with uncontrolled seizures. All investigations were not significant except for one electroencephalogram finding and positive test for anti-GABA B receptor. Improvement was evident following pharmacological treatment, family sessions and environmental stimulation during the process of identification. Multimodal intervention during the post-acute encephalitis improved depression and quality of life.

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Introduction

It has been documented that encephalitis is a rare syndrome with approximately 37-50% of the cases having unknown etiologies (Chapman & Vause, 2011). Among the many types of encephalitis, autoimmune GABA encephalopathy has been linked to neuropsychiatric disorder in the form of a multistage illness that progresses from psychosis, memory deficits, seizures and language disintegration into a state of unresponsiveness with catatonic features often associated with abnormal movements, and autonomic and breathing instability (Kayser & Dalmau, 2011). It is also an abnormal autoimmune reaction, which happens when a person's own antibodies attack the protein involved in the synaptic function (Kayser & Dalmau, 2011) resulting in impaired cognition, decreased functional outcomes and increased burden of care. Importantly, there is still scarce information on how to manage the psychiatric manifestation following encephalitis cases (Chapman & Vause, 2011). This case report illustrates the management of encephalopathy with uncontrolled epilepsy and severe cognitive impairment.

Case Report

A 44 –year-old woman with no known medical problem presented to our psychiatric unit with memory problems for 12 months following episodes of uncontrolled epilepsy. Premorbidly, she was well until June 2015 when she presented with generalised tonic-clonic seizure not preceded with fever while taking care of her son who was hospitalised for Tuberculosis Lymphadenitis. The seizure was characterized by sudden stiffness, jerking of the whole body, up-rolling of eyeballs, which lasted for a few minutes and associated with postictal drowsiness. It was not associated with aura, head trauma, fever, urinary or bowel incontinence or any neurological deficit during that time. She also experienced transient visual hallucination and sometimes her body would become stiff, her head tilted to one side and she would be talking irrelevantly for a few minutes. This condition or "trance" episodes imposed significant distress to the family as she had to depend on family members to help with both the activities of daily living (ADL) and the instrumental activities of daily living (IADL). The family members believed that she was possessed by a demon and were worried that she would become worse. The `trance` episodes became more frequent; occurring about three to five times daily, disturbing her sleep and functioning.

She also had been in and out of several different private hospitals due to status epilepticus. She was intubated in Intensive Care Unit (ICU) for a month and was treated as status epilepticus of unknown cause. During these episodes, a few MRI Brain scans were done which showed no significant findings. Similarly, several blood investigations were found unremarkable (Mohd Yusof et al., 2017). She continued having recurrent epileptic attacks for less than a minute for about two to three times per month after being discharged from the hospital with severe behavioural changes, despite being prescribed with the appropriate medications. The family was worried about her condition and wanted to know the causes of her illness. They sought help from several psychiatrists and neurologists prior to visiting our centre. Her movement was also slow, and she was wheelchair bound. Round-the-clock nursing was provided by her family to monitor her condition, medications and assist with whatever help she required. During her first session in our centre, she had difficulty speaking, with pronounced difficulties in word finding. Sometimes she ended either staying mute or crying when she had difficulty to say what was on her mind. She also had no recollection over what had happened to her that led her to feel depressed. She also repeatedly demanded that her husband tell her what had happened to her. She kept saying she was a burden to her family. She developed a severe depressive mood and severe cognitive deficit following uncontrolled seizure.

Neuropsychological assessment was conducted to assess her cognitive and behavioural status and to determine appropriate intervention for her. Neuropsychological assessment indicated a wide range of cognitive impairments signalling frontal lobe dysfunction. Nominal dysphasia, problems in mood regulation as well as memory dysfunction was pronounced. Severe depression was indicated through PHQ-9. Feedback about the result was sought from the family where negative expectations were addressed. Appropriate interventions were designed which involved a combination of individual and family intervention sessions. Communications with her private neurologist, whenever necessary and with the family's permission were included. Psycho education about her illness was provided to the whole family especially about handling her during seizures as well as in managing her cognitive impairment. Her family was advised to support and assist her in gradually re-learning new skills as well as being sensitive with their comments on her as she easily felt that she was a burden to them. The family also was asked to spend time and praise her whenever she accomplished a certain activity goal. Activities such as taking vacation and physical exercise, simple social gatherings were also applied to prevent stress that may induce her seizures.

Most individual sessions were adapted to her level of cognitive function. Visual and verbal cues were used accordingly to facilitate her grief following the loss of function. Validation of her thoughts and feelings were provided to assist in instilling positive beliefs. Behaviour experiments were applied with aid from the husband to identify, challenge and re-evaluate her negative thoughts. Environmental stimulation with the help of her family members was added to stimulate her cognitive function. This included daily word puzzles to increase her word knowledge, and a picture diary of her important life events to act as a memory aid for her. Round-the-clock nursing was terminated as the family received more information about how to handle her and became less overprotective. Similar daily routine and environmental cues were maintained to ease her emotional stability and memory. She was on medication which were optimized with levetiracetam 1000mg bd, phenytoin 200mg bd, sodium valproate chrono 500mg on, clonazepam 0.5mg om and 1mg on, quetiapine 12.5mg on and donapezil 10mg on. In terms of depression, patient improved on escitalopram from 5 mg increased and maintained to an optimal dose of 10mg ON.

During this period, investigation was conducted concurrently to determine the causes of illness. More details of her condition and medical findings have been described elsewhere (3). Detailed medical investigations were carried out, focusing on lumbar puncture for the first time, screening for autoimmune, infective and malignant conditions. Electroencephalogram (EEG) showed ongoing complex partial status epilepticus and Magnetic Resonance Imaging (MRI) brain revealed multiple small patchy foci of T2 hyperintense signal in the subcortical white matter of bilateral hemispheres, which were non-specific. The hippocampus was not gliotic. Autoimmune screening showed positive antibody for GABA B receptor. Intravenous immunoglobulin was given. After approximately 16 therapy sessions, there was significant improvement in her depression levels. She was able to attend her son's convocation overseas and was involved in the planning of two of her sons' weddings. After showing significant sustained improvement and seizure-free period, antiepileptic medications were gradually reduced and her tumour marker level was monitored yearly instead of normal range.

Discussion

This case illustrates the consequence of refractory epilepsy with autoimmune involvement. Autoimmune encephalitis was considered, as it consists of seizures, psychosis, mood deregulation, and memory impairment. Some of the patients with autoimmune GABA B encephalitis have been associated with malignancy especially small cell lung carcinoma, as autoimmune encephalitis can be part of a paraneoplastic syndrome (Boronat et al., 2011). In other cases, there are relative proportions of patients who were previously diagnosed with encephalitis of unknown origin would then be found to have had anti-NMDA encephalitis (Chapman & Vause,2011). In this patient's case, the origin of her illness was still unidentified, thus, she was screened for malignancy and the results were normal. The rapid development of psychiatric symptoms, seizures, altered cognitive function, and disordered movement in a female without fever should raise suspicion for an underlying encephalitic process, and prompt clinicians to pursue further work-up. In this case study, the patient experienced complex partial status seizures, which was misdiagnosed as depressive psychosis. Her hallucinations were related directly to the seizures and resolved once the seizures were treated appropriately. She had history of status epilepticus initially at the onset of illness that caused injury to her brain, which manifested as multiple small white matter lesions at her subcortical cortex. The hypoxic brain superimposed with later complex partial seizures had exacerbated her brain injury (Elaine, 2001; Elger, 2004).

In terms of management, the management of GABA B encephalitis is like any other autoimmune disorder in which immunosuppressants such as steroid, mycophenolate mofetil and intravenous immunoglobulin may be used. The prevalence of depression among patients with uncontrolled seizure is 20-50%, whilst postictal psychosis contributes about 25%. Immune activation was reported as having an association with depressive symptoms via alteration of monoaminergic system and activation of the hypothalamic-pituitary-adrenal (HPA) axis (Pollak & Yermia, 2002). Therefore, anti-inflammatory treatment will have anti-depressive effect and some antidepressants have anti-inflammatory property (Pollak & Yermia, 2002) that treat depression symptoms. However, recovery is usually slow and requires rehabilitation, thus family members need to be supported in providing care to the patient. In term of non-pharmacological approach on the behavioural changes especially in agitated and insomniac patient, the use of anti-psychotic and sedative medications should be carefully weighted, as we optimize based on the risks and benefit. Threatening conditions such as respiratory depression, neuroleptic malignant syndrome etc. should be seen as a confounding factor, as these may be resulting from the illness or can also be the adverse effect from the drugs (Jones, 2013; Nicola, 2019). Cognitive impairment such as anterograde amnesia, retrograde amnesia etc., accompanied by dysregulation of mood was documented especially in long-term post encephalitis (Hokkanen & Launes, 2007). The psychotherapeutic management such as cognitive behaviour therapy that is integrated to the rehabilitation process can improve a patient's life (Bonnie-Kate & Fergus, 2007).

Conclusion

The success of this case depends on the multidisciplinary approach of providing treatment that can match with the individual's and family's needs. Working with the patient's family during their adaptation with the diagnosis and courses is quite challenging and requires tact as we are not only supporting their emotional reaction to the illness but also providing the appropriate skills for them to cope positively. Breakdown in both patient or family member with depression or suicidal behaviour may happen if their expectation is

not matched or if they face unbearable stress following diagnosis and this need to be addressed and prevented. In conclusion, a multidisciplinary approach is imperative on the management of GABA B encephalitis patient, in order to prevent physical and cognitive complications. Psychiatrist should be aware of atypical psychiatric cases representation of the patient and organic causes should be considered especially in cases related to GABA B encephalitis.

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