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Case Report

Rituximab for Anti-N-Methyl-D-Aspartate Receptor Encephalitis

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Introduction

Anti-N-Methyl-D-Aspartate (NMDA) receptor encephalitis is a severe, but potentially reversible autoimmune encephalitis, dominantly affecting children and young adult women [1]. Approximately 60% of patients with NMDA encephalitis have tumors containing nervous tissue, such as ovarian teratoma [2].

Case Description

A 34 years old otherwise healthy woman presented with 2-weeks duration of visual hallucination, inappropriate laugh, impulsivity, short-term memory difficulty, and headache. She then developed hypersalivation, which required an intubation to protect the airway. Brain MRI revealed scattered FLAIR hyper-intensities in the bi-frontal cerebral white matter. CSF from lumbar puncture was positive for NMDA receptor antibody with the titer of 1:16. The patient's clinical symptoms were refractory to a robust course of IVIG treatment. Given the association of NMDA encephalitis and tumor association, Pelvis MRI was performed to screen for malignancy. On the MRI, a small cyst in the left ovary was visualized. The patient underwent a laparoscopic left salpingo-oophorectomy. The surgical biopsy from the operation revealed an ovary with mature teratoma. Even after the removal of the tumor, there was no significant improvement. For this reason, a 4 week course of Rituximab 700 mg once a week was started. Her respiratory, neurological, and musculoskeletal function dramatically improved after 3 weeks of Rituximab treatment. In the third week of the Rituximab therapy regimen, the patient was discharged to an acute rehabilitation facility, as she gained the strength to participate in more rigorous exercises.

Discussion

This case illustrates the novel therapeutic approach to NMDA encephalitis, using Rituximab, the monoclonal antibody targeting the B cells [3]. Awareness of the effectiveness of Rituximab in NMDA encephalitis may improve the prognosis for the patients who fail the conservative treatments, such as steroids, IVIG, and plasmapheresis.

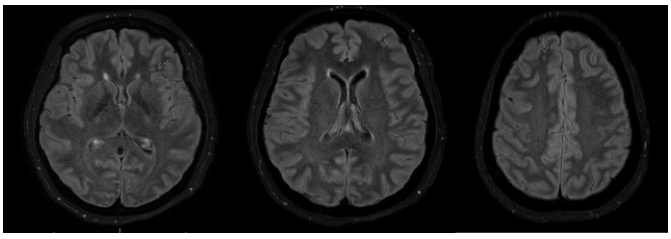

Figure 1: Brain MRI with and without contrast revealing scattered FLAIR hyper-intensities (arrows) in the bi-frontal cerebral white matter.

References

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