Anti-N-methyl-d-aspartate receptor encephalitis (Anti-NMDAR-E), is a rare life threatening paraneoplastic disease. It was discovered in 2007 and its incidence is unknown. It mostly affects women with ovarian teratomas; however, it can also affect men and women without tumors.

Abnormalities on EEGs, cerebrospinal fluid, and vital signs are commonly seen. The presence of slow wave activity on EEGs occurs in approximately 80% of the cases.

NMDA receptors are found in the forebrain, hypothalamus, and limbic system structures (e.g., hippocampus). These receptors are crucial for adequate synaptic transmission, hippocampal long-term potentiation, and dendritic sprouting. NMDA receptors are involved in learning related plasticity.

The overall recovery process for this condition varies. For some patients no major improvements are seen at 6 and 12 months post-diagnosis. However, at 72 months significant improvements are seen in attention, memory, and problem-solving.

A comprehensive neuropsychological battery was administered 15 months post-illness onset, to delineate cognitive, emotional, and behavioral functioning.

A.G.'s case describes chronic cognitive and emotional sequelae of Anti-NMDAR-E. Results indicated good problem solving abilities, visual scanning, and academic achievement 15 months post-illness. Visual memory and visuoconstructional skills were adequate. Verbal memory was not significantly impaired; however, mild consolidation inefficiencies relative to estimated premorbid status were present.

Ongoing deficits were found in executive functioning, particularly with tasks that required cognitive flexibility, attention-shifting, and sustained attention.

A.G. presented as guarded and demonstrated a perfectionistic and self-demanding disposition. Post-illness symptoms of anxiety, depression and social withdrawal were noted. These were, in part, attributed to her reaction to actual and perceived changes in cognitive and academic functioning. Organic changes related to her condition also were possible.

Another case of a 15-year-old female who developed Anti-NMDAR-E following an immunization was reported in 2011. The association between immunizations and adverse neurological events should be further studied in an attempt to understand a possible correlation.