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Letter to the Editor

Psychosis and catatonia as presenting features of anti-N-methyl-D-aspartate (anti-NMDA) receptor encephalitis

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Sir,

Anti-NMDA receptor encephalitis, initially discovered and described in 2007 (Dalmau et al., 2011), is a rare but interesting entity presenting with a gamut of psychiatric symptoms as abnormal movements, psychosis, paranoia and catatonia. Because the condition responds well to treatment, active and early diagnosis in these cases is necessary. This will be possible if the psychiatrist is well acquainted with this phenomenon, and thus this report.

A 27-year-old female presented to us with a history of fever with upper respiratory infection for 5 days, followed by sub-acute onset agitation, fearfulness, persecutory delusion and hallucinatory behavior; for a total duration of 1 month. During the initial part of her illness, she was referred to a psychiatrist for her psychiatric symptoms by the treating physician, and the agitation had reduced with oral Lorazepam 2 mg/day in two divided doses. However, over next 2 weeks, the other symptoms worsened. She became disoriented, and bizarre involuntary movements in lower limbs developed, with associated rigidity. She was admitted after 3 weeks of onset of fever to the medicine ward of a tertiary level medical facility, when the rigidity and abnormal movements had further aggravated. Her CSF study was within normal limits at admission, with lymphocyte count at 5/cc. Psychiatric referral was done, and a provisional diagnosis of catatonia was made. She was started on intravenous Lorazepam 8 mg/day in four divided doses, and was investigated thoroughly. Her brain MRI (plain and with contrast) was normal. EEG showed diffuse slowing, without any evidence of epileptiform discharges. A strongly positive anti-NMDA receptor antibody titer (<1:10) was noted. She was further investigated, specifically for an ovarian tumor, but they failed to demonstrate any evidence of any space occupying lesions. Lorazepam was tapered off in next 2 days, and she was started on methyl prednisolone 1 g IV OD for 5 days, and a total of 5 cycles of plasmapheresis on alternate days. Over next 10 days, she became oriented and stable. For her residual psychotic symptoms, olanzapine was started and continued at 10 mg/day, till complete recovery at 1 month.

Anti-NMDA-receptor encephalitis is commoner in females, with up to 80% of the cases reported in the fairer sex – frequently in association with ovarian teratomas (Dalmau et al., 2011). However, nearly 50% cases may occur without any such associations (Kayser and Dalmau, 2011). The median age of presentation is 23 years. The condition is associated with antibodies against NR1–NR2 heteromers (Barry et al., 2011) and is characterized by a combination of neuropsychiatric symptoms, seizures, alteration of consciousness, movement disorders, and autonomic instability (Dalmau et al., 2011; Iizuka and Sakai, 2008).

The peculiar movement disorder is believed to be an interruption of forebrain corticostriatal inputs by anti-NMDA receptor antibodies that remove tonic inhibition of brainstem pattern generators which in turn releases primitive patterns of bulbar and limb movements (Gable et al., 2009; Hughes et al., 2010).

Anti-NMDA encephalitis has a classical sequence of symptom onset and resolution- as evident in our patient. This is an example of an infectious origin of the condition, which is rare in the literature. The report also describes its successful treatment with immune-suppression therapy. This disorder can have a potential role in developing a model for schizophrenia studies (Ryan et al., 2013), and calls for increased vigilance from the clinicians for this particular entity in any first onset acute psychosis patient.

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