

NMDA receptor antibodies in neuroborreliosis.

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Anti-NMDA receptor (NMDA-R) encephalitis may occur as a post-infectious syndrome following HSV encephalitis. However, *Borrelia burgdorferi* is not a known infective trigger of NMDA-R encephalitis and NMDA-R antibodies have not been previously reported in association with neuroborreliosis.

We report the case of a 27-year-old woman who presented with acute psychosis. She had a history of tick bite in Slovenia two months previously, followed by headache, flu-like symptoms and diplopia two weeks later. She then developed behavioural disturbance, with disinhibition, disordered thought and paranoia, resistant to antipsychotic medication. MRI brain revealed multiple enhancing white matter lesions and diffuse cranial nerve enhancement. CSF was active. Lyme serology (*Borrelia* IgG and IgM immunoblot) was positive. NMDA-R antibodies were positive (serum and CSF; fixed- and live-cell assays). Infective, autoimmune and neoplastic workup was otherwise unremarkable. She received antimicrobial treatment for neuroborreliosis as well as a course of intravenous immunoglobulin, with gradual resolution of the neuropsychiatric disturbance, normalisation of her neuropsychological assessment and improvement of the MRI appearances. Repeat NMDA-R antibody testing upon convalescence was negative in the serum and CSF (live-cell assay).

This is the first reported case of NMDA-R antibody positivity with clinical features of NMDA-R antibody-associated encephalitis in serologically confirmed Lyme disease.

Word limit: 200