Supplementary Data: clinical histories of the patients from the current series.

Patient 1

A 19 year-old pregnant woman was admitted for agitation, delusions, and visual and cenesthetic hallucinations at 25 weeks of pregnancy. She had reported headaches one week before. She had no relevant medical history and the neurological examination was unremarkable. The next day, she had a generalized seizure and became comatose. Examination showed orofacial dyskinesias, upper limb myoclonus, and sinus bradycardia. She was transferred to the intensive care unit (ICU) for sedation and mechanical ventilation, and treated with levetiracetam and empirical antimicrobial therapy (acyclovir and amoxicillin). A brain MRI revealed bilateral T2-weighted mesio-temporal hyperintensities. Cerebrospinal fluid (CSF) analysis revealed pleocytosis (200 white blood cells [WBC]/mm3, 82% lymphocytes) with increased protein concentration (2.53 g/L). Routine CSF studies, bacterial cultures, and HSV-1 PCR were negative, while NMDAR antibodies were positive. The patient was treated with intravenous (IV) immunoglobulins (IVIg) and IV methylprednisolone starting on day 10 of admission, with no improvement. Rituximab was given on days 15 and 30, followed by plasma exchange 3 weeks later. Due to severe bradyarrhythmia, a cesarean section was performed 2 weeks after disease onset and the patient delivered a healthy baby girl (APGAR score not provided). Due to the absence of improvement, 6 courses of intravenous cyclophosphamide were administered, followed by 2 infusions of bortezomib. An ovarian teratoma was found and removed 5 months after disease onset. Signs of mild improvement (e.g., compliance to simple orders, eye pursuit) were noted 13 months after disease onset. At last visit, 20 months after disease onset, the patient had improved, but remained with substantial disability (modified Rankin scale [mRS] score: 4). At 18 months of age the child was developing normally.

Patient 2.

A 37 year-old pregnant woman was admitted at 33 weeks of gestation with bulbar palsy and bilateral facial hypoesthesia that had progressively developed over 2 weeks. She had no relevant past medical history. On admission, physical examination showed dysphagia, dysarthria, and bilateral facial hypoesthesia. CSF examination revealed WBC 13/mm3 (98% lymphocytes), normal protein concentration, and no oligoclonal bands (OCB). HSV-1 PCR was negative. Brain MRI was unremarkable. The patient underwent caesarean section 3 days after admission, and delivered a healthy girl (5-minutes APGAR score: 9/10). She needed ventilatory support and was treated with IVIg. The following day she became confused and developed oral dyskinesias. On day 6, she received IV methylprednisolone. Despite this treatment and IVIg, she became extremely agitated and developed nocturnal central apnea and bradycardia. High titers of CSF NMDAR antibodies were then reported in serum and CSF. A pelvic MRI did not show evidence of ovarian teratoma. On day 21, she received IV cyclophosphamide, and ten days later, additional IV methylprednisolone and IVIg. On day 39, she was started on tacrolimus. On day 41, she could be weaned from mechanical ventilation and one month later she was discharged without neurological deficits. She remained free of symptoms (mRS score: 0) 18 months after disease onset. At 14 months of age her daughter was developing normally.

Patient 3.

A 31 year-old pregnant woman was admitted at 20 weeks of gestation for fluctuations of the level of consciousness, orofacial dyskinesias, memory problems, and delusions. She had been treated 2 weeks before for HSV-1 encephalitis and had improved after treatment, with minimal residual cognitive defects. Brain MRI was unchanged and showed bilateral mesio-temporal T2-weighted hyperintensities. The CSF showed 10 WBC/mm3 (93% lymphocytes), it was negative PCR for HSV-1 and positive for NMDAR antibodies. She was then treated with steroids and IVIg and recovered to a normal level of consciousness. A cesarean section was performed at 35 weeks of gestation and she delivered a boy. At birth her son had respiratory insufficiency and was admitted to the neonatal ICU. He improved spontaneously over the next 24 hours suggesting his respiratory problems were related to sedative drugs given to the mother. Following delivery, the patient was treated with rituximab followed by 6 courses of cyclophosphamide. She progressively improved, although psychomotor slowing, mild anterograde amnesia, and depressed mood persisted at last visit, 21 months after disease onset (mRS score: 3). At 18 months her son had normal behavior and development.

Patient 4.

A 25 year-old pregnant woman with no relevant medical history was admitted in the neurology department at 5 weeks of gestation because of acute onset of psychotic symptoms, followed a few days later by temporal lobe seizures. The day after admission, she became comatose and was admitted to the ICU. Examination showed fluctuation of the level of consciousness and choreic movements with the upper limbs. MRI showed bilateral temporal-mesial T2-weighed hyperintensities. CSF analysis demonstrated normal cell count and protein concentration and was positive for NMDAR antibodies. An ovarian teratoma was identified and removed one week after disease onset. She was then treated with one course of IV methylprednisolone and IVIg. Because of a lack of improvement, she was then treated with plasmapheresis, followed by rituximab (first infusion 3 weeks after disease onset). She started to progressively improve 12 weeks after disease onset. At 6 months of follow-up, she had psychomotor slowing, memory impairment, and needed help for activities of daily living (mRS score: 4). She delivered a healthy girl (5-minute APGAR score: 10/10) at 33 weeks of pregnancy. Follow-up of her daughter was not provided to us.

Patient 5.

A 20 year-old pregnant woman with no relevant medical history was admitted at 12 weeks of pregnancy following a generalized tonic-clonic seizure. Over the previous month, she had developed behavioral changes, lethargy, and difficulties in speaking and reading. Brain MRI was normal. CSF analysis showed 120 WBC/mm3 (95% lymphocytes) with normal protein concentration. She was empirically treated with acyclovir, amoxicillin, levetiracetam, tiapride, and IV methylprednisolone. Her symptoms worsened and she developed alternating catatonia and agitation, apraxia, choreiform movements, marked reduction of speech fluency, and tachycardia. She then developed central hypoventilation, cardiac pauses, hallucinations, and was admitted in the ICU. NMDAR antibodies were identified in the CSF and she was treated with IVIg and additional courses of IV methylprednisolone. Despite these treatments she developed generalized status epilepticus and was sedated with propofol. Pelvic MRI did not show evidence of teratoma. She slowly improved and was discharged 5 months after disease onset. At that time, she was apathetic and socially disinhibited. The pregnancy was uneventful and she naturally delivered a healthy girl (5-minute APGAR score: 10/10) at 38 weeks of pregnancy. At the last follow-up (38 months after onset), the patient had completely recovered, except for mild attention disorder (mRS score: 1). Follow-up of her daughter 48 months after birth showed normal development and behavior.

Patient 6.

A 23 year-old woman was admitted at 8-weeks of pregnancy for nausea, auditory hallucinations and paranoid delusions. She had no prior medical history and her physical examination was unremarkable. Twelve days later, she developed catatonia, mutism, and decreased level of consciousness. Brain MRI was unremarkable; CSF showed 14 WBC/mm3 (100% lymphocytes), normal protein concentration, and CSF specific OCB. The next day she was transferred to the ICU due to complex partial seizures and autonomic dysregulation with bradycardia, cardiac pauses, and intermittent desaturation. On day 17, NMDAR antibodies were identified in serum and CSF and she was treated with IV methylprednisolone for 5 days. The same day, she had a cardiac arrest and was resuscitated. A mature teratoma of the left ovary was detected by pelvic MRI and resected a few days later. On day 24 she was treated again with IV methylprednisolone and on day 28 she received IVIg. The autonomic dysfunction and her level of consciousness improved, while the psychiatric symptoms became more prominent. IVIg was repeated on day 34, and she continued to improve, with decreased initiative and motivation as the predominant symptoms. A cesarean section was performed under full anesthesia at 36 weeks of gestation. No abnormality was reported in the infant (male) except for low birth weight. Follow-up of the infant at 5 months showed that he had reached all expected developmental milestones. Twelve months after disease onset, the mother had not completely recovered (mRS score: 2).

Patient 7.

A 37 year-old woman was admitted for behavioral changes, limb myoclonus and orofacial dyskinesias. She had no relevant medical history but had reported headache, vomiting, and fever during the last 10 days. After admission, she developed severe anterograde and episodic amnesia, speech dysfunction, apathy, and anxiety. She had complex visual hallucinations. Brain MRI was normal. CSF analysis revealed 40 WBC/mm3 (100% lymphocytes) and normal protein concentration. CSF bacterial cultures and HSV-1 PCR were negative, and NMDAR antibodies were detected in serum and CSF. A left ovarian teratoma was detected and surgically removed. The patient was then treated with IVIg. Due to lack of improvement, rituximab was started 3 weeks after disease onset. The patient progressively improved. She became pregnant (unplanned) 8 months after onset of recovery, at which time she still had mild anterograde amnesia, anxiety, and reduced speech fluency (mRS score: 1). The pregnancy was uncomplicated and she delivered a healthy boy (5-minute APGAR score: 10/10) at 39 weeks of pregnancy. A follow-up 17 months later showed that the boy was developing normally. At the last follow-up 35 months after disease onset, the patient had completely recovered (mRS score: 0).

Patient 8.

A 31 year-old woman, with no relevant medical history developed headache and unspecified visual complaints. Two weeks later, she presented with asthenia and behavioral changes followed a few days later by mutism and aggressiveness. While admitted in a psychiatry department she attempted suicide several times. Neurological evaluation revealed anterograde memory impairment and psychomotor slowing. Brain MRI was normal. CSF studies showed the presence of NMDAR antibodies. A pelvic MRI ruled out an underlying teratoma. She was then treated with IVIg and progressively improved. The patient had an unplanned pregnancy one month later, at which time she still had mild anterograde memory impairment (mRS score: 2). The pregnancy evolved with no complications and she delivered a healthy boy at 39 weeks of gestation. At the last follow-up 84 months after disease onset, the patient had mild cognitive impairment, and her child was normal.

Patient 9.

A 20 year-old woman with no relevant medical history was admitted for rapidly progressive confusion, followed by several generalized tonic-clonic seizures. Once admitted, she became agitated and incoherent, and had auditory and verbal hallucinations. The patient was initially treated with acyclovir, amoxicillin and levetiracetam. Brain MRI was normal, CSF analysis showed 68 WBC/mm3 (93% lymphocytes) and normal protein concentration. Infectious disease screening including among other HSV-1 PCR were negative. NMDAR antibodies were identified in CSF; a pelvic MRI ruled out a teratoma. The clinical status worsened during the following days with alternating agitation and lethargy, mutism, central hypoventilation, and orofacial dyskinesias and motor stereotypies in both hands. The patient was treated with IVIg and IV methylprednisolone, starting day 6 after disease onset. Because there was no improvement, rituximab was started on day 13. The patient progressively improved over the following weeks. An unplanned pregnancy was discovered during a PET scan carried out for tumor screening 6 months after disease onset. The onset of pregnancy was estimated 4 months after starting the neurological improvement. The pregnancy was uncomplicated and the patient delivered naturally a healthy boy (5-minutes APGAR score: 10/10) at 39 weeks of gestation. The child was followed up 7 months and had normal development. At last follow-up 20 months after disease onset, the patient still complained of mild attention deficit but her neurological examination was otherwise normal (mRS score: 1).

Patient 10.

A 23 year-old woman with no previous medical history was admitted for paranoid delusions following a series of grand mal seizures. Brain MRI was unremarkable; CSF showed 79 WBC/mm3 and HSV-1 PCR was negative. While hospitalized, she developed aggressiveness, visual hallucinations, alternating catatonia and agitation, and memory impairment. She was treated with valproate and several antipsychotic medications; became seizure free and her psychiatric condition stabilized. She had an uncomplicated pregnancy 3 years later and delivered a healthy daughter. Six months after delivery, she relapsed, presenting with memory problems, anhedonia, paranoid delusions, visual hallucinations, and episodes of hypomania. Brain MRI showed FLAIR abnormalities involving the right parietal and left occipital regions, medulla oblongata, and splenium of the corpus callosum suggesting demyelinating changes. CSF analysis revealed 54 WBC/mm3 and CSF specific OCB. NMDAR antibodies were detected in serum and CSF. A pelvic MRI scan ruled out a teratoma. She was treated with IVIg, and then rituximab, which was repeated every 6 months for 2 years during which time she progressively improved. Three years after this relapse, an unplanned pregnancy was discovered in a follow-up pelvic MRI. She had incompletely recovered at that time and still had depression and impulsivity (mRS score: 1). This second pregnancy also developed without complications and she delivered a healthy girl (5-minutes APGAR score: 10/10) after a cesarean section. At the last visit, the patient had completely recovered and worked full-time as an office employee (mRS score: 0). Her daughter is 8 years-old and has developed normally.

Patient 11.

A 22 year-old woman with no relevant medical history was admitted to the psychiatric ward for progressive behavioral changes associated with anxiety and sleep disturbance. During her admission, for a period of 2 months, she tried to commit suicide jumping from a window, and later she swallowed a plastic knife that had to be extracted under endoscopy. The neurological examination showed a marked reduction of speech fluency with echolalia, perseveration, apathy, and anterograde amnesia. Brain MRI was unremarkable. NMDAR antibodies were detected in CSF, and a pelvic ultrasound ruled out a teratoma. The patient was treated with monthly courses of IVIg and oral steroids. Behavior and cognition started to improve 3 weeks after disease onset. Five months after the onset of recovery she became pregnant (unplanned). At this time she had almost completely recovered, complaining only of mild attention deficit (mRS score: 1). The pregnancy was uneventful and she delivered naturally a healthy boy at 36 weeks of gestation. At last visit (46 months after disease onset), she had completely recovered from the encephalitis (mRS score: 0). The baby was followed-up at 30 months, and was reported to have normal development.