Novel Influenza A (H1N1) Presenting as an Acute Febrile Encephalopathy in a Mother and Daughter

To the Editor—Neurological complications with the novel influenza A (H1N1) virus have been recently reported in children [1]. However, to our knowledge, there have been no reported cases in adults. We describe an otherwise healthy 46-year-old woman and her daughter who presented to a community hospital emergency department (Fort Myers, Florida) with an acute febrile encephalopathy of ~1 day’s duration.

The mother had been ill for 3 days with fever and influenza-like illness but progressed to confusion so profound that she did not recognize her family. In the emergency department, she was febrile to 39.5°C. On physical examination, she was an obese woman who acted inappropriately, was not oriented to person, place, or time, and exhibited slow speech with delayed responses to questions. She had no history of tick or mosquito exposures and no travel outside of the local area. A complete neurological examination was difficult to perform secondary to her cooperation but was grossly unremarkable.

To detect the novel influenza A (H1N1), but tests sample had PCR results that were positive for novel influenza A (H1N1), but tests performed on a frozen CSF sample had negative results. A nasopharyngeal swab sample had PCR results that were positive for novel influenza A (H1N1), but tests performed on a frozen CSF sample had negative results. A patient was discharged from the hospital on day 4 after admission to complete a 5-day course of oseltamivir. At a 1-week follow-up appointment, the patient’s symptoms had completely resolved, and she had returned to daily activities. She did, however, continue to complain of feeling somewhat slow.

One day after the patient’s admission to the hospital, her 11-year-old daughter was admitted to the local children’s hospital emergency department with cough, headache, emesis, and change in mental status. She was unsteady and had sustained several falls at home. Her affect was flat, and she was answering questions very slowly. An analysis of CSF specimens had normal results. The patient had negative nasopharyngeal influenza rapid test results, and therefore she was not placed in respiratory isolation. She initiated oseltamivir therapy the next day, after it was learned that her mother had been admitted to the hospital with probable influenza A H1N1 infection. The results of PCR of nasopharyngeal secretions were positive for novel influenza A (H1N1), but the virus was not detected in her CSF sample. She improved after 48 h, and she was discharged home to complete 5 days of therapy. At follow-up, her mental status had returned to baseline.

Neurological complications of seasonal influenza virus infection have been well de-
scribed, mostly in children and young adults [2, 3]. They appear early in the course of disease and include encephalopathy, encephalitis, seizures, Reye syndrome, and Guillain-Barre syndrome, among others, ranging from mild, transient central nervous system alterations to severe forms with high associated mortality. A report from Dallas, Texas, detailed 4 pediatric patients with novel H1N1 influenza A virus infection, with relatively mild neurological symptoms associated with the infection [1]. The children presented with seizures and encephalopathy 1–4 days into the illness. None had CSF pleocytosis or isolation of the virus from CSF samples. All of the children recovered without complications.

The pathogenesis of influenza virus encephalopathy is not clear. The virus is rarely amplified in the CSF by PCR or recovered in tissue samples, which suggests that the neurological manifestations are more likely to be related to inflammatory responses with increase in cytokine release [2, 4, 5]. Our case of an acute febrile encephalopathy presenting in a mother and child who presumably were infected with the same influenza H1N1 strain raises the possibility that host factors, in addition to properties of specific influenza strains, may play a role in the development of neurological complications.

To our knowledge, this is the first reported case of an adult presenting with an acute febrile encephalopathy secondary to infection due to the novel H1N1 influenza. Our patients’ symptoms were relatively mild and responded rapidly to therapy. Clinicians should remain vigilant for unusual presentations of this novel virus, given the significant implications for therapeutic interventions and infection control.

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References