

# Cerebellitis Associated with Influenza A(H1N1)pdm09, United States, 2013

Technical Appendix Table. Characteristics of 8 reported cases of influenza cerebellitis in 5 published articles before this study. Six of the cases were described in children. Five patients had possible diagnosis of influenza cerebellitis. One patient had a complicated course.

| Published case, year of publication, (Language of publication)                | Characteristics, signs, symptoms                                                                                      | Brain imaging                                                                                                   | CSF analysis                                                                        | Confirmed (C) or probable (P) influenza cerebellitis                                                                                     | Lower respiratory tract symptoms and chest radiography findings                                                                       | Treatment                                         | Resolution of symptoms                                                                    |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------|
| <i>Hayase Y et al, Internal Medicine 1997</i> (English)                       | Woman, 31 y; fever and ataxia                                                                                         | Normal brain CT and MRI                                                                                         | Normal cell count, glucose and protein                                              | (C) High serum hemagglutination inhibition titer to influenza B, and positive CSF RT-PCR for influenza B nucleoprotein gene              | NA                                                                                                                                    | NA                                                | NA                                                                                        |
| <i>Tilli-Graies K et al, J Neuroradiol. 2006</i> (French)                     | 4 children, 2-7 y; headache, fever, and vomiting; ataxia was present in 2 cases                                       | Initial MRI (2 cases) demonstrated increased intensity on T2W and Flair sequences of the cerebellar gray matter | High lymphocytes and proteins in samples from 3 children; normal values for 1 child | (P) Viral serologic tests were negative for 3 cases; serum sample from 1 child was positive for Epstein-Barr virus                       | No respiratory symptoms noted. No chest radiograph                                                                                    | Prednisone ×5 d for 3 cases and ×10 d for 1 case. | Complete resolution of symptoms in 3 cases; persistent mild right upper limb paresis in 1 |
| <i>Apok V et al, J Neurol Neurosurg Psychiatry Poster 0102,2010</i> (English) | Teenaged girl with acute fulminant cerebellitis following a course of antiviral for H1N1 virus                        | Hydrocephalus                                                                                                   | NA                                                                                  | (P) Influenza RT-PCR in CSF was negative                                                                                                 | Patient had cough and fever and was started on antiviral therapy; no chest radiograph                                                 | NA                                                | Residual left-sided ataxia after 3 months.                                                |
| <i>Hackett I et al, Ir Med J. 2013</i> (English)                              | Child, 6 y; headache, worsening dysarthria and ataxia; coordination revealed significant bilateral dysdiadochokinesia | MRI brain revealed findings consistent with a diagnosis of cerebellitis, no enhancement was noted post contrast | Lumbar puncture parameters were normal                                              | (C) CSF samples RT-PCR–positive for influenza A and influenza B and nasopharyngeal aspirate RT-PCR–positive for influenza A(H1N1) and B. | 2 weeks before treatment sought, patient had rhinitis, cough, and fever; chest radiography showed mild bilateral bronchial prominence | Oseltamivir ×5 d                                  | All symptoms fully resolved after 1 week                                                  |
| <i>Ishikawa T et al, Rinsho Shinkeigaku. 2006</i> (Japanese)                  | Woman, 25 y; fever and headache                                                                                       | T2-weighted brain MRI demonstrated a high signal lesion in the cerebellar cortex.123l-                          | Pleocytosis                                                                         | (C) Nasal swab sample positive in the influenza assay and a ≥4× change in the antibody titer to influenza virus A                        | Not available                                                                                                                         | Oseltamivir                                       | Truncal ataxia normalized after 3 mo.†                                                    |

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|----------------------------------------------------------------|----------------------------------|--------------------------------------------------|--------------|------------------------------------------------------|-----------------------------------------------------------------|-----------|------------------------|
|                                                                |                                  | IMP-SPECT showed hypoperfusion in the cerebellum |              | (H3N2) detected by hemagglutination inhibition       |                                                                 |           |                        |

\*NA: not available.

†Followup imaging showed cerebellar cortical lesion observed on MRI had resolved 80 days after hospitalization; laboratory data indicated that cerebrospinal fluid pleocytosis had normalized ≈3 months later.