

ed in 7 patients; 5 were co-infected with HBoV (2 patients had LRTIs, 2 had upper respiratory tract infections, and 1 had undefined symptoms), and 2 were co-infected with RSV (both patients had symptoms of LRTIs). Of the other 3 patients co-infected with HRV and HBoV, 1 was infected with HRV-B (had LRTI), 1 with HRV-C (had LRTI), and 1 with an untypeable HRV (had undefined symptoms). Co-infections with HRV and RSV (4,5) and HRV and HBoV (4) have been reported.

Although the clinical role of these co-infections needs to be clarified, these studies suggest that co-infections may result in more severe disease symptoms. The role of HRV-C in causing illness among the children of Singapore will require further study.

This study was supported by the National Medical Research Council of Singapore and the DSO National Laboratories, Singapore.

**Boon-Huan Tan, Liat-Hui Loo,
Elizabeth Ai-Sim Lim,
Shirley Lay-Kheng Seah,
Raymond T.P. Lin,
Nancy W.S. Tee,
and Richard J. Sugrue**

Author affiliations: DSO National Laboratories, Singapore (B.-H. Tan, E.A.-S. Lim, S.L.-K. Seah); Nanyang Technological University, Singapore (L.-H. Loo, R.J. Sugrue); Kandang Kerbau Women's and Children's Hospital, Singapore (L.-H. Loo, N.W.S. Tee); and National University Hospital, Singapore (R.T.P. Lin)

DOI: 10.3201/eid1508.090321

References

- Lamson D, Renwick N, Kapoor V, Liu Z, Palacios G, Ju J, et al. MassTag polymerase-chain-reaction detection of respiratory pathogens, including a new rhinovirus genotype, that caused influenza-like illness in New York State during 2004–2005. *J Infect Dis.* 2006;194:1398–402. DOI: 10.1086/508551
- Lau SK, Yip CC, Tsoi HW, Lee RA, So LY, Lau YL, et al. Clinical features and complete genome characterization of a distinct human rhinovirus (HRV) genetic cluster, probably representing a previously undetected HRV species, HRV-C, associated with acute respiratory illness in children. *J Clin Microbiol.* 2007;45:3655–64. DOI: 10.1128/JCM.01254-07
- Lee WM, Kiesner C, Pappas T, Lee I, Grindle K, Jartti T, et al. A diverse group of previously unrecognized human rhinoviruses are common causes of respiratory illnesses in infants. *PLoS One.* 2007;2:e966. DOI: 10.1371/journal.pone.0000966
- McErlean P, Shackelton LA, Lambert SB, Nissen MD, Sloots TP, Mackay IM. Characterisation of a newly identified human rhinovirus, HRV-QPM, discovered in infants with bronchiolitis. *J Clin Virol.* 2007;39:67–75. DOI: 10.1016/j.jcv.2007.03.012
- Xiang Z, Gonzalez R, Xie Z, Xiao Y, Chen L, Li Y, et al. Human rhinovirus group C infection in children with lower respiratory tract infection. *Emerg Infect Dis.* 2008;14:1665–7. DOI: 10.3201/eid1410.080545
- Loo LH, Tan BH, Ng LM, Tee NW, Lin RT, Sugrue RJ. Human metapneumovirus in children, Singapore. *Emerg Infect Dis.* 2007;13:1396–8.
- Tan BH, Lim EA, Seah SG, Loo LH, Tee NW, Lin RT, et al. The incidence of human bocavirus infection among children admitted to hospital in Singapore. *J Med Virol.* 2009;81:82–9. DOI: 10.1002/jmv.21361
- Hayden FG, Turner RB, Gwaltney JM, Chi-Burris K, Gersten M, Hsyu P, et al. Phase II, randomized, double-blind, placebo-controlled studies of rupintrivir nasal spray 2-percent suspension for prevention and treatment of experimentally induced rhinovirus colds in healthy volunteers. *Antimicrob Agents Chemother.* 2003;47:3907–16. DOI: 10.1128/AAC.47.12.3907-3916.2003
- Tamura K, Dudley J, Nei M, Kumar S. MEGA4: Molecular Evolutionary Genetics Analysis (MEGA) software version 4.0. *Mol Biol Evol.* 2007;24:1596–9. DOI: 10.1093/molbev/msm092
- Miller EK, Edwards KM, Weinberg GA, Iwane MK, Griffin MR, Hall CB, et al. New Vaccine Surveillance Network. A novel group of rhinoviruses is associated with asthma hospitalizations. *J Allergy Clin Immunol.* 2009;123:98–104. DOI: 10.1016/j.jaci.2008.10.007

Address for correspondence: Boon-Huan Tan, Detection and Diagnostics Laboratory, DSO National Laboratories, #13-00, 27 Medical Dr, Singapore 117510; email: tboonhua@dso.org.sg

Nondominant Hemisphere Encephalitis in Patient with Signs of Viral Meningitis, New York, USA

To the Editor: Herpes simplex virus (HSV) is the most common cause of sporadic fatal encephalitis across the globe and for all ages. HSV is the etiologic agent of 10%–20% of the 20,000 cases of encephalitis per year in the United States (1); >50% of untreated cases are fatal. Of the 2 types of HSV, HSV-1 and HSV-2, HSV-1 most commonly affects persons 20–40 years of age, whereas HSV-2 commonly affects neonates. This rapidly progressive disease is a common cause of fatal encephalitis in the United States. Signs and symptoms include fever and headache for a few days, followed by confusion, focal deficits, seizures or hemiparesis, hallucinations, and altered levels of consciousness (2). One third of all HSV encephalitis cases afflict children and adolescents. Lumbar puncture typically shows lymphocytic pleocytosis, increased erythrocytes, and elevated protein (2); glucose level is typically within normal limits. Serologic assays often show prior infection. Brain imaging frequently indicates unilateral frontal or temporal lobe abnormalities with edema or hematoma (3,4). The involvement of the nondominant brain hemisphere is associated with atypical signs and symptoms (5). Diagnosis is usually made by using PCR to examine viral DNA in cerebrospinal fluid (CSF) (6). This method of finding DNA in CSF is highly sensitive (98%) and specific (94%–100%). Without therapy, 70% of patients die; with therapy, 20%–30% die (6). Illness includes behavioral sequelae.

A 43-year-old female immigrant from China was admitted to Flushing

Hospital Medical Center in Flushing, New York, with complaints of headache, fever, and vomiting, which she had experienced for \approx 1 week. She had no photophobia, confusion, or rash; neurologic examination found no abnormalities. CSF contained 81 leukocytes with 82% lymphocytes, 3 erythrocytes, protein at 194 mg/dL, and glucose at 67 mg/dL. CSF was positive for HSV-1 viral DNA by PCR. A computed tomography (CT) scan of the head showed unilateral temporal lobe edema. Intravenous acyclovir 10 mg/kg every 8 hours was administered. HIV test was negative. On day 5, a repeat CT scan showed worsening edema and hemorrhage, despite clinical improvement (Figure). CSF contained 490 leukocytes with 99% lymphocytes and protein at 336 mg/dL. After continued treatment with paravenous acyclovir, the patient's symptoms resolved. On day 12, the patient

was discharged after a final CT scan showed resolution of hemorrhage and edema and CSF contained decreased leukocytes and protein.

Although this patient had classic signs of meningitis without encephalitis, the CT scan of the head showed cerebral involvement. These factors can be explained by the location of cerebral inflammation in the nondominant lobe of the brain, thereby masking signs of encephalitis. The classic teaching that viral meningitis may not need treatment may miss the occasional viral encephalitis if brain imaging and CSF PCR are not performed. Failure to perform these tests may lead to illness and death from HSV encephalitis if this disease is not considered as a possible diagnosis.

Deborah Asnis and Nadia Niazi

Author affiliation: Flushing Hospital Medical Center, Flushing, New York, USA

DOI: 10.3201/eid1508.090466

References

1. Whitley RJ. Viral encephalitis. *N Engl J Med.* 1990;323:242–9.
2. Levitz RE. Herpes simplex encephalitis: a review. *Heart Lung.* 1998;27:209–12. DOI: 10.1016/S0147-9563(98)90009-7
3. Taylor SW, Lee DH, Jackson AC. Herpes simplex encephalitis presenting with exclusively frontal lobe involvement. *J Neurovirol.* 2007;13:477–81. DOI: 10.1080/13550280701491131
4. Politei JM, Demey I, Pagano MA. Cerebral hematoma in the course of herpes simplex encephalitis. *Rev Neurol.* 2003;36:636–9.
5. Kennedy PGE, Chaudhuri A. Herpes simplex encephalitis. *J Neurol Neurosurg Psychiatry.* 2002;73:237–8. DOI: 10.1136/jnnp.73.3.237
6. Fodor PA, Levin MJ, Weinberg A, Sandberg E, Sylman J, Tyler KL. Atypical herpes simplex virus encephalitis diagnosed by PCR amplification of viral DNA from CSF. *Neurology.* 1998;51:554–9.

Address for correspondence: Deborah Asnis, Flushing Hospital Medical Center, Department of Internal Medicine, 4500 Parsons Blvd, Flushing, NY 11335, USA; email: iddoc@erols.com



Figure. Computed tomograph scan showing hemorrhage in edematous part of brain of patient with herpes simplex virus encephalitis, day 5 of hospitalization.

Tick-Borne Rickettsiosis in Traveler Returning from Honduras

To the Editor: Although tick-borne rickettsioses are widespread globally, few reports document their presence in Central America (1). Serosurveys detected rickettsial antibodies in humans in Central America in 1971 in Costa Rica, Honduras, Nicaragua, and Panama (2,3). An outbreak of rickettsial illness was reported to have occurred in Costa Rica in 1974, where 2 case clusters affected 6 of 15 family members (4). A rickettsial organism was isolated from a patient who died in Panama in 1950 (5), and more recently *Rickettsia rickettsii* was con-