Lymphocytic choriomeningitis in a pet store worker, Romania

Lymphocytic choriomeningitis virus (LCMV) causes aseptic meningitis although it may be associated systemic organ failure in immunocompromized patients [1, 3, 5]. LCMV is also a teratogenic pathogen causing a severe and often fatal syndrome with hydrocephalus and chorioretinitis [4, 7]. Affected infants suffer from blindness, deafness, mental retardation, and paresis. The reservoir of the virus are mice and hamsters which shed the virus in urine and other body excretions. Several LCMV infections were recently reported from southern France [2, 6]. Here, we report on a LCMV infection in a pet store worker in Romania.

A 27 years old man was admitted to the hospital of infectious diseases Cluj-Napoca, Romania, on February 12, 2008, due to suspect of aseptic meningitis. The patient worked in a pet store selling mice, hamsters, guinea pigs, squirrels, mustellides, chinchillas, and birds. He presented with high fever (>40˚C), chills, nausea, persistent vomiting, headache, photophobia, neck stiffness, drowsiness, confusion, and bradycardia (54/min). Kernig’s and Brudzinski’s signs were absent. A computed tomography scan of the brain showed neither pathological uptake of contrast dye nor cerebral edema. Cerebrospinal fluid (CSF) analysis revealed a lymphocytic pleocytosis (800/mm³), slightly elevated protein level (77 mg/dl), and normal blood/CSF glucose ratio. CSF, urine, and blood cultures were negative for fungi and bacteria including mycobacteria. The patient did not show signs of immune deficiency and serological testing revealed no evidence for acute infection with herpesviruses, Toxoplasma gondii, Chlamydia pneumoniae and psittaci, Leptospira, Mycoplasma pneumoniae, and Borrelia. Serum and CSF samples were sent to the Bernhard-Nocht-Institute for Tropical Medicine in Germany for LCMV diagnostics. Immunofluorescence assay (IFA) with LCMV-infected cells showed an IgG titer of 1:320 (cut-
off 1:20) and an IgM titer of 1:80 (cut-off 1:20) in the serum sample from acute phase, and an IgG titer of 1:5,120 and an IgM titer of 1:320 in the follow-up sample, demonstrating acute LCMV infection. IgG (titer 1:160) and IgM (titer 1:80) antibodies were also detected in a CSF sample. LCMV RT-PCR with serum and CSF was negative. The patient was treated with acyclovir (30 mg/kg/day for 10 days) due to an initial suspect of herpesvirus infection, manitol (1 g/kg/day for 5 days) and dexamethasone (16 mg/day for 5 days). His condition improved and he was discharged on March 3, 2008, with restitutio ad integrum.

After notification of the Romanian public health and veterinary service, all small mammals of the pet store were culled, the premises were disinfected, and wild rodent control measures were introduced. However, rodents were disposed without collecting samples for laboratory investigation. Serum samples were taken from all employees of the pet store (n=11) and screened for LCMV-specific antibodies. Evidence for a previous LCMV infection was found in one person (IgG titer 1:40).

This report describes a LCMV infection that has presumably been acquired via contact with mice or hamsters in a pet store, although other sources of infection cannot be excluded. Besides the fact that workers involved in breeding and handling pet rodents are at risk of contracting the disease, selling LCMV-infected rodents is a major public health issue [1]. Consequences of infection are particularly serious for pregnant women and their unborn child [4, 7]. This case underscores that pet rodents shall not come in contact with wild rodents to prevent spread of the virus to the public.

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References


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