



## BRIEF REPORT

# Acute Human Cytomegalovirus Infection with Bleeding in Iran

Behzad Pourhossein<sup>a,b,h</sup>, Farhad Yaghmaei<sup>a,c,h</sup>, Saber Esmaili<sup>a,c</sup>,  
Omid Banafshi<sup>d</sup>, Shahla Afrasiabian<sup>e</sup>, Mohammad Reza Shirzadi<sup>f</sup>,  
Mark Schleiss<sup>g</sup>, Ehsan Mostafavi<sup>a,c,\*</sup>

<sup>a</sup>Department of Epidemiology, Pasteur Institute of Iran, Tehran, Iran.

<sup>b</sup>Department of Virology, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran.

<sup>c</sup>Research Centre for Emerging and Reemerging Infectious Diseases (Akanlu), Pasteur Institute of Iran, Kabudar Ahang, Hamadan, Iran.

<sup>d</sup>Department of Disease Control, Deputy of Health, Kurdistan University of Medical Sciences, Sanandaj, Iran.

<sup>e</sup>Infectious Disease Department, Kurdistan University of Medical Sciences, Tohid Hospital, Sanandaj, Iran.

<sup>f</sup>Center of Communicable Diseases Control, Ministry of Health, Treatment and Medical Education, Tehran, Iran.

<sup>g</sup>Division of Infectious Diseases, Children's Hospital Medical Center, Department of Pediatrics, University of Cincinnati College of Medicine, Cincinnati, OH, USA.

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### Abstract

In December 2011, a 42-year-old male farmer was admitted to a hospital in Sanandaj (Western Iran) with fever and anemia in order to check whether he suffered from some infectious diseases. During the first 3 days after admission, the patient gradually developed progressive oliguria, fever, abdominal pain in the right upper quadrant, leukocytosis with toxic granulation, petechiae and ecchymosis, oral bleeding, and vomiting. The sonographic findings revealed splenomegaly and an increase in the thickness of the gall bladder wall. In order to manage the patient and taking into consideration the most probable differential diagnoses, diagnostic tests were performed on two blood samples collected from him, and real-time polymerase chain reaction for human cytomegalovirus was positive.

\*Corresponding author.

E-mail: [mostafavi@pasteur.ac.ir](mailto:mostafavi@pasteur.ac.ir)

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<sup>h</sup>These two authors are co-first authors and are listed alphabetically.

## 1. Introduction

Human cytomegalovirus (HCMV) is a member of the Betaherpesvirinae subfamily of Herpesviridae, with double-stranded linear DNA genomes. There are many ways of detecting this family in the blood or sera [1]. This virus has a worldwide distribution. Between 40% and 100% of adults from different populations become infected by the 4<sup>th</sup> decade of life [2]. This virus can cause acute infection and serious complications in immunocompromised people, especially in transplanted patients or in pregnant women (which can cause fetal anomalies). Most HCMV infections in immunocompetent people are asymptomatic, and some produce a mononucleosis-like syndrome [3]. There have been reports of severe hemolytic anemia, severe thrombocytopenia, and various types of hemorrhage in some HCMV patients [4].

In the present study, an uncommon case of acute infection, which was caused by HCMV and involved multiple organs, is outlined. Reactivation of CMV occurs frequently in critically ill, immunocompetent patients and is associated with prolonged hospitalization or death.

## 2. Case report

On December 26, 2011, a man was admitted to Tohid hospital in Sanandaj (Western Iran), for the removal of kidney stones, with the following profile: farmer, 42 years old, diabetic, and resident of a village near Sanandaj, Iran. The patient had a fever of 38.9°C (102°F) and appeared anemic on early examination.

The patient had no history of hepatic, renal, vascular, or digestive system disorders. He consumed rabbit meat 2–3 weeks prior to admission. There were no significant findings on clinical examination of the cardiovascular system, pulmonary system, or abdomen, but he was restless and suffering from dizziness on admission. Over the first 3 days post admission, the patient gradually developed progressive oliguria, fever, abdominal pain in the right upper quadrant, leukocytosis with toxic granulation (in peripheral blood smear), petechiae and ecchymosis (Figure 1), oral bleeding, and vomiting. On an initial sonographic examination to evaluate the patient for the possibility of cholangitis, the spleen was found to be larger than usual (150 mm) and the thickness of the gall bladder wall was increased. The right kidney was larger than normal, and its corticomedullary echo was increased. On the 3<sup>rd</sup> day post admission, there were severe thrombocytopenia and increases in creatinine, alkaline phosphatase, bilirubin, and hepatic enzymes (alanine aminotransferase and aspartate aminotransferase; Table 1). Over the next few days, the patient's consciousness decreased, and he became disoriented with respect to time and place. Gradually, by the 7<sup>th</sup> day, the patient developed myalgia and hematuria, and became



**Figure 1.** Petechiae and ecchymosis in the upper limbs of the patient. Petechiae were seen on the 2<sup>nd</sup> day until the 16<sup>th</sup> day post admission.

icteric. On the following day, icterus decreased. On the 9<sup>th</sup> day, consciousness levels improved and his general condition gradually improved over the next few days.

Blood and urine cultures were negative during hospitalization. After admission, the patient was treated with supportive therapies, including blood transfusion, antibiotic therapy (ciprofloxacin, ampicillin/sulbactam, and metronidazole; from the 2<sup>nd</sup> day), receipt of fresh frozen plasma (from the 6<sup>th</sup> day), dialysis (from the 7<sup>th</sup> day), and administration of dexamethasone 8 mg Q, which was gradually tapered to 4 mg Q 12 hours (from the 12<sup>th</sup> day until discharge). The fever gradually diminished from the 13<sup>th</sup> day; dexamethasone dose was tapered and intravenous antibiotic therapy changed to cefixime and metronidazole.

The patient was transferred from an intensive care unit isolation ward to an infectious disease ward, on January 11, 2012. Meanwhile, the patient's platelet count was >85,000 and bleeding had stopped. On January 18, 2012, he was discharged with complete recovery after 23 days. The patients did not receive any antiviral treatment during his stay in the hospital.

The patient returned to the hospital for renal stone removal after 1 month and was operated upon. He was discharged with complete recovery after 48 hours. After 1 year, the patient was monitored, and he had no major medical problems.

The blood and serum samples were referred to the Department of Epidemiology of the Pasteur Institute of Iran on December 31, 2011 (the 5<sup>th</sup> day of admission) and January 18, 2012 (discharge day). The samples were sent to the relevant laboratories of the Pasteur Institute of Iran, to test for Crimean–Congo hemorrhagic fever (CCHF), hantavirus (Seoul, Khabarovsk, and Puumala), dengue fever, plague, tularemia, and leptospirosis. A survey of antihepatitis A virus antibody had already been carried out in the Tohid hospital (on the 2<sup>nd</sup> day post admission).

## 3. Results

The results of the tests on the first blood samples were negative for CCHF [enzyme-linked immunosorbent

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