

Acute cytomegalovirus hepatitis in immunocompetent host

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Abstract

Background: In immunocompetent hosts, cytomegalovirus (CMV) infection is generally asymptomatic. It may however present as infectious mononucleosis. Serious complications have rarely been reported. We report three cases of acute CMV hepatitis in immunocompetent men for the first time from Bangladesh. All three presented to us with features of acute hepatitis of variable duration preceded by prodrome. Other probable causes of acute hepatitis were ruled out and none had any clinical stigmata of cirrhosis. All the three patients underwent uneventful recovery. Although more common in the immunocompromised, CMV can occasionally produce symptomatic hepatitis in the immunocompetent host. Disease is self limiting, but supportive measures are needed.

Key words: Cytomegalo virus, Acute hepatitis, Immunocompetent host

CMV rarely leads to clinically explicit disease in immunocompetent individuals^{1,2}. It is responsible for infectious mononucleosis in healthy humans. On rare instances though, CMV may lead to a variety of manifestations including gastrointestinal, cardiovascular, hepatic and neurologic and may be associated with significant morbidity. We report three cases of acute CMV hepatitis in immunocompetent hosts for the first time from Bangladesh.

Case Report

The first patient, a 22 year old, male presented to us with jaundice for four weeks. The onset was preceded by prodrome for one week. His liver profile showed highest recorded serum bilirubin 160 $\mu\text{mol/L}$, maximum serum alanine amino transferase (ALT) 1502 U/L and maximum prolongation of prothrombin time 19 sec (control 12 sec). The patient recovered completely after six weeks.

The second patient was a 26 year old, young male who presented to us with jaundice for ten days following prodromal symptoms that persisted for a couple of weeks. In this case the highest recorded serum bilirubin was 391 $\mu\text{mol/L}$, maximum serum ALT 2937 U/L and highest prothrombin time was 16 sec (control 12 sec). The patient recorded complete recovery after nine weeks.

The third patient was also a young, male aged 32 years. He presented to us with jaundice for 18 days. Onset of jaundice was preceded by prodrome persisting for more than a week. His highest recorded serum bilirubin

was 306 $\mu\text{mol/L}$, serum ALT 2711 U/L and highest prothrombin time was 14 sec (control 12 sec). In this case also complete recovery was seen after five weeks.

None of the patients had any past history of jaundice and on clinical examination none of them had any stigmata of chronic liver disease. They were all non-alcoholics. All of them tested positive for anti-CMV IgM by Enzyme linked immunosorbent assay (ELISA). They had normal haemoglobin and total white cell count, normal peripheral blood film, reticulocyte count and normal haemoglobin electrophoresis. They tested negative for anti-HAV IgM, anti-HEV IgM, HBsAg, anti-HBc IgM, anti-HCV and anti-dengue IgM by ELISA. Their serum ceruloplasmin was normal and none had Kayser-Fleischer (KF) ring on slit lamp examination. Dark ground microscopy of urine tested negative for *Leptospira icterohaemorrhagica*. Anti-nuclear antibody (ANA), Anti-smooth muscle antibody (ASMA), Anti-mitochondrial antibody (AMA) were also negative in all three. In every patient, ultrasonography of hepatobiliary system revealed features suggestive of acute hepatitis (Figures 1 & 2). Patient characteristics are summarized in table 1.

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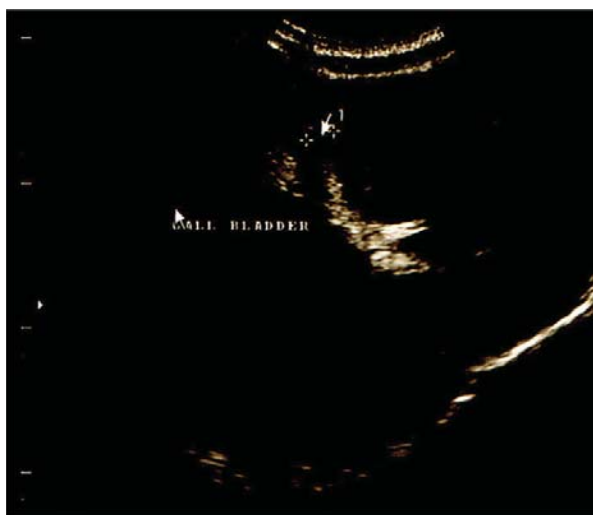


Fig 1: USG of hepato-biliary system of first patient showing contracted gall bladder.



Fig 2: USG of hepato-biliary system of first patient showing hypoechoic hepatic parenchyma.

Table 1: Patient characteristics.

Number of patients	03
Male:Female	3:0
Age (in years)	22-32
Duration of prodrome (in weeks)	2 (avg.)
Serum bilirubin ($\mu\text{mol/L}$)	160-391
Serum ALT (U/L)	1502-2937
Prothrombin time (in sec.) (control 12 sec.)	14-19
Duration of illness (in weeks)	8-10

Discussion

Although CMV infection in immunocompetent hosts is usually asymptomatic or cause infectious mononucleosis, rarely the virus may cause hepatic, gastrointestinal, cardiovascular and neurologic complications in immunocompetent individuals^{1,2}, which may result in substantial morbidity and occasional mortality.

Hepatic involvement with CMV in immunocompetent individuals is usually associated with minimal elevation of serum transaminases and elevations of serum alkaline phosphatase and serum bilirubin are unusual^{1,3,4}. However full blown acute hepatitis with marked alteration of liver function is rare. Pericarditis and myocarditis have also been described in immunocompetent patients with acute CMV infection^{5,6}.

There is similar case report from Spain where 36 year old man presented with hepatitis and myopericarditis. He had complaints of fever and chest pain radiating to shoulders. His liver functions tests showed elevated serum transaminases as well as elevated creatinine kinase-MB (CK-MB), cardiac troponin T, creatine kinase and myoglobin. He tested positive for anti-CMV

IgM by ELISA. Other possible causes of hepatitis were ruled out with normal results. The patient was diagnosed with CMV hepatitis with myopericarditis. He recovered completely on symptomatic treatment and was discharged⁷.

Conclusion

Symptomatic CMV infection in the immunocompetent host is generally self-limiting with complete recovery within weeks to months. Supportive measures are adequate and specific anti-CMV therapy probably is not needed.

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