Case Reports

Hepatitis E Associated Myocarditis: An Unusual Entity


Abstract

Myocarditis is an important cause morbidity and mortality worldwide. Common causes being coxsackie viruses, entero viruses, influenza viruses, protozoas, drugs (antipsychotics, antimicrobials, antidepressants), radiation and autoimmune disorders. Though hepatitis B and C viruses are well known to cause myocarditis, hepatitis E as a cause of myocarditis is not known. We present a case report of a young male presenting with jaundice and myocarditis due to hepatitis E virus. To the best of our knowledge this is the first ever case report of its type.

Introduction

Myocarditis is clinically and pathologically defined as the inflammation of myocardium. Clinical presentation of the disease range from nonspecific systemic symptoms (fever, myalgias, palpitations) to exertional dyspnoea to rapid haemodynamic collapse and sudden death.

Lieberman et al has described broader clinicopathological classification to incorporate the varied clinical features of the disease. This classification divides myocarditis into fulminant, subacute, chronic active and chronic persistent subtypes.

Hepatitis E virus is primarily a hepatotropic virus and simultaneous involvement of other extrahepatic sites are not known. It is an important cause of viral hepatitis in Indian subcontinent adolescents and adults specially in pregnant females in whom it has as high as 20% mortality.

Case Report

A 21 year old male presented in casualty with complaints of breathlessness, cough, jaundice and dark urine for 2 days duration. Detailed history revealed 2 episodes of mild grade fever and flu like symptoms about 7 days back.

Physical examination revealed a thin built male in respiratory distress with a rate of 29/min sweating profusely with a BP of 80/60 mm Hg. He was afebrile at the time of examination. Cardiac auscultation revealed muffled heart sounds with an S3. Respiratory system revealed bilateral crepitations extending upto 2/3 lung fields. During hospitalization, he deteriorated and was intubated and put on mechanical ventilation.

ABG revealed hypoxaemia with a saturation of 86% and metabolic acidosis. CBC revealed TLC of 3800/cu.mm, total lymphocyte count of 1000/cu.mm, platelet count was 100,000/cu.mm with Hb of 14 gm%. Liver function test showed total bilirubin of 9 gm%, direct fraction being 5 mg% and indirect being 4 mg%. SGOT and SGPT being 1200 and 1155 IU respectively. ALP was 800 IU. Blood sugar was 90 mg%. Kidney function test was absolutely normal. Viral markers were sent as routine for jaundice evaluation. HBsAg and anti HCV were negative. Anti HEV was strongly positive done on two occasions from the same lab. Cardiac enzymes namely CPK-MB and Troponin T was also positive. Blood culture report showed no growth after 72 hrs of incubation. ANA and ANCA was negative. Chest X-ray showed cephalization of vessels with normal cardiothoracic...
ECG was showing sinus tachycardia with non specific ST-T changes. 2D echocardiogram showed generalized hypokinesia involving both the ventricles with severe left ventricular dysfunction with an ejection fraction of 20%.

The patient deteriorated while being on inotropic supports, diuretics, protonpump inhibitors, heparamerz, inj.carnitine. Then it was decided to put the patient on inj. hydrocortisone 100 mg i/v 6 hourly. On the day 2 of steroid therapy, he showed signs of improvement in haemodynamic parameters, urine output, sensorium and inotropic dose requirement. He was successfully weaned off ventilator by day 5. Repeat 2D echocardiogram after 2 weeks showed improvement in cardiac contractility with an EF of 40%.

The patient was discharged on diuretics, ramipril, beta-blocker in low dose and tablet prednisolone 1 mg/kg body wt/day with tapering dose for 3 months.

**Discussion**

Diagnosis of myocarditis has puzzled cardiologists because of variable presentation i.e from asymptomatic ECG abnormalities most commonly sinus tachycardia to cardiogenic shock. The incidence of viral prodrome is highly variable ranging from 10-80% in patients with documented myocarditis. Our patient had a clear cut history of viral prodrome some 7 days before hospitalisation. Even the very invasive endomyocardial biopsies has a very low yield. However with a hybrid of lab. investigations and imaging modality in combination may help to reach a diagnosis without necessarily resorting to biopsy in all the cases. Although most reports have come up showing response of myocarditis to a combination of immuno-suppressives, this case was unique in the sense the patient had responded very well to single agent i.e. prednisolone without any relapse or deterioration on stopping the therapy at 3 months.

Thrombocytopenia also improved gradually with steroid therapy. As far as hepatitis C virus is concerned the causative relationship between HCV infection and dilated cardiomyopathy is concerned TNF and cytokine receptor have been implicated. The association of myocarditis, hepatitis, thrombocytopenia and the dramatic response to prednisolone points to a possible autoimmune basis for the same.

**References**

6. Acute immune thrombocytopenia associated with hepatitis E virus in an adult. Nishith kumar Singh, Malatesha Gangappa. Department of Internal Medicine, All India Institute of Medical Sciences, New Delhi, India.