

A Case Report on Hepatitis C Induced Acute Immune Thrombocytopenia

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ABSTRACT

Chronic hepatitis C virus (HCV) infection is recognized as a global health problem with 170 to 200 million people estimated to be infected worldwide. Chronic HCV is one of the most common chronic viral infections worldwide and it is a major cause of cirrhosis, end-stage liver disease and hepatocellular carcinoma. While HCV induced thrombocytopenia observed among these patients, thrombocytopenia is one of the rarely observed. We present a case with HCV infection in which thrombocytopenia developed in starting phase treatment. Although there are not an adequate number of studies on this subject, it was concluded thrombocytopenia that developed because of HCV infection is a favorable option.

KEYWORDS: Acute immune thrombocytopenia, hepatitis C virus, ITP

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Background

Chronic hepatitis C virus (HCV) infection is recognized as a global health problem with 170 to 200 million people estimated to be infected worldwide [1]. Chronic HCV is one of the most common chronic viral infections worldwide and it is a major cause of cirrhosis, end-stage liver disease and hepatocellular carcinoma [2,3]. Moreover, this infection has been associated with an increased risk of developing chronic immune thrombocytopenic purpura (ITP). HCV infection-induced thrombocytopenia has an underlying autoimmune mechanism similar to that of ITP. The virus binds to thrombocytes, resulting in the production of auto antibodies against thrombocyte membrane antigens. Over 90% of patients with chronic HCV infection develop high levels of immunoglobulin (Ig)G associated thrombocytes called platelet-associated IgG (PAIgG) [4,5]. High PAIgG levels are directly related with liver disease severity, suggesting that chronic HCV infection is associated with major changes in the immune system [6].

Here in we report the case of a patient with acute thrombocytopenia during an HCV infection.

Case presentation

In January 2020, a 64-year-old female was hospitalized for the recent appearance of fever, abdominal pain, nausea, vomiting, and loss of appetite, headache, fatigue and body ache, excessive bruising, bleeding from gums and purple

spot on the lower leg. She has not significant previous history of any viral infections. In physical examination found to be lower extremities blister, and parameter summarized in table no.1

Table no.1

Parameter	Observed value
Blood pressure	110/70 mmhg
Respiration Rate	18/min
Temperature	101.2 f
Pulse rate	68/min
CVS	S ₁ S ₂ +
CNS	Well oriented
Cyanosis	+
Pallor	+
Clubbing	-

Patient HCV RNA was positive. The patient was diagnosed with hepatitis C induced acute immune thrombocytopenia. The laboratorial value summarized in table no. 2

Table no.2**At the time hospitalization**

Parameter	Observed value	Normal value
Hemoglobin	7.7	11-15 g/dl
WBC	2.03	4-11 L
Neutrophils	1.26	2-7 L
Monocytes	0.10	0.12-1.20 L
RBC	2.58	3.50-5.50 L
Platelet count	85	1.5-4.5 L
SGOT	150	0-40 U/L
SGPT	126	0-40 U/L
HCV RNA quantitative	Positive (471430)	<21.00 IU/ml
Urine R/M	Negative	
MP card	Negative	
Creatinine	0.99	0.5-1.5 mg/dl
HbA1C	9.9	

According to lab value; she had acute thrombocytopenia without taken any retroviral therapy. Patient treated with Sofosbuvir & velpatasvir, and monitored regularly because of her had already thrombocytopenia. These antiretroviral have same adverse effect. Platelet count fully normalized 5 weeks following treatment initiation and remained within normal range thereafter. The patient went through his 12 weeks course of sofosbuvir- velpatasvir with a good tolerance, without any specific adverse event reported.

Discussion

Chronic HCV may be accompanied by variable levels of thrombocytopenia caused by different mechanisms: central and peripheral autoimmune mechanisms or drug-induced thrombocytopenia. An autoimmune mechanism was found in 85% of the cases. HCV infection can directly suppress megakaryocyte production. Interferon treatment also has a direct myelosuppressive effect that could lead to thrombocytopenia [1,2,3]. Patients are considered eligible for HCV infection treatment if their platelet count is above $90 \times 10^9/L$ [4,5]. In December 2012, eltrombopag was approved by the US FDA for treatment of HCV infection-related thrombocytopenia. It is the first drug approved for ITP treatment in patients who are refractory to other treatments (for example, corticosteroids, Igs) [6]. Eltrombopag is also the first orally bioavailable drug in its class and is a thrombopoietin receptor agonist that induces increased proliferation and differentiation of human bone marrow progenitor cells into megakaryocytes and increased platelet production in the circulation. The development of a targeted thrombopoietin receptor agonist has great

implications for the therapy of patients with diseases associated with decreased platelets [7].

Conclusion

It was concluded that hepatitis C infection has been associated with an increased risk of developing chronic immune thrombocytopenic purpura (ITP) without any antiretroviral therapy.

Consent

Written informed consent was obtained from the patient for publication of this case report.

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