

# Acute HCV Infection Induced Immune Thrombocytopenia Complicated by Intracerebral Hemorrhage: A Case Report

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**Abstract:** Immune thrombocytopenic purpura (ITP) is an autoimmune disorder that causes isolated thrombocytopenia. Many viruses have been identified as triggering the autoimmune process, including HIV, HCV, EBV, parvovirus, rubella and measles. However, ITP in association with HCV infection rarely occurs in initial stages when AntiHCV is still nonreactive in rapid test kits. We describe the case of a 45 years old otherwise healthy male who presented with acute left sided intracerebral hemorrhage and generalised purpura. Initial labs showed severe thrombocytopenia followed by negative rapid test kit for viral markers including AntiHCV and HBsAg but positive HCV RNA.

## Learning Points: -

- 1) Acute HCV Infection Can Cause Severe Immune Thrombocytopenia
- 2) HCV Infection should be ruled out if the HCV antibody test is Non Reactive
- 3) Intracerebral Hemorrhage is an uncommon presentation in Acute HCV infection associated ITP

**Keywords:** Hepatitis C Virus, Immune Thrombocytopenia, Intracerebral Hemorrhage, extrahepatic manifestation of HCV

## 1. Introduction

Immune thrombocytopenic purpura (ITP) is a rare hematological disorder formerly known as idiopathic thrombocytopenic purpura before the autoimmune mechanism was identified and found to be triggered by many, mostly viral, infectious agents. Most cases of ITP are benign with only minor mucosal bleeding as the main presentation. We present a case of severe thrombocytopenia complicated by intracranial hemorrhage following acute HCV Infection which is Rare.

## 2. Case Report

A 45 Years old Healthy Male Presented to Emergency Department with sudden onset weakness of right upper limb and lower limb with slurring of speech for 10 days along with generalised purpura, hematuria, and black tarry stools with periorbital bruising.

Upon arrival at emergency department the Patient was conscious alert oriented with time place and person with Blood pressure 140/90

Pulse 92 bpm, Temperature - 98.7°f, Respiratory rate - 18 breath/min. physical examination revealed gum bleeding. Examination for the skin remarkable for the purpurral rash over chest trunk and limbs.

Systemic examination was unremarkable.

Laboratory Findings were as follows:

Haemoglobin - 9.5 g/dl, WBC - 14300 cells/

RBC - 2.95million/, Platelets count - 06 thousand. LFT & KFT - Within Normal limits.

FDP - 2.19 ug/ml Fibrinogen antigen - 215.18 mg/dl, D dimer - 1901 ng/ml, PT INR, aPTT - Within Normal limits CRP - 80.1 mg/L

Ultrasound whole abdomen - Normal Study

Rapid Antibody test for HIV, HCV & HBsAg - Negative. For the Confirmation HIV and HCV by ELISA & HCV RNA was done which showed HCV by ELISA Positive with HCV RNA - 604893 IU/ml (5.78 Log IU/ml).

Multiple Platelet transfusions were done and patient was started on DAAs - Velpatasvir and Sofosbuvir.

The Next day Patient developed Headache and his Level of consciousness deteriorated to GCS of 11/15. Urgent CEMRI Brain Showed Intracerebral Bleed (Acute & Subacute) in parieto occipital & left Frontal Lobe.

After 6 days of conservative management, Platelet count reached  $45 \times 10^3$  and gradual improvement in GCS and power of U/L and L/L was seen and hematuria and melena subsided. After Rehabilitation Patient improving.

## 3. Discussion

Acute ITP is common in children (<10 years) in contrast to the chronic form which is more common in adults.

The exact mechanism of ITP is poorly understood, with many hypotheses claiming that viral infection triggers the disease after which preformed antibodies cross - react with platelet antigens.

Clinical presentation varies from the more common petechiae, purpura and mucous membrane bleeding (epistaxis or gum bleeding) to the rare severe gastrointestinal or

intracranial bleeding, which has been reported in 1.4% of patients

Viruses thought to cause ITP include HIV, HCV, CMV, EBV, herpes viruses and VZV.

An association between ITP and some bacterial infections such as tuberculosis and *Helicobacter pylori* has been documented. However, ITP in Acute HCV infection is rare, even though the virus is common.

Infection with HCV has been associated with severe acute hematological changes in patients notably including lymphopenia, Hemolytic Anemia and thrombocytopenia. The development of thrombocytopenia may involve a number of mechanisms. Although the development of autoimmune antibodies or immune complexes triggered by viral infection may play a significant role in inducing thrombocytopenia, may also directly infect haematopoietic stem/progenitor cells, megakaryocytes and platelets, inducing their growth inhibition and apoptosis.

#### 4. Conclusion

HCV is well - known cause of immune thrombocytopenia but Acute and sub acute infection may rarely cause severe ITP. Therefore, a viral panel test for HCV HIV HBsAg with ELISA should be used when Rapid Antibody Negative in the initial assessment of a patient with immune thrombocytopenia.

#### References

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