

## Case Report

# Hemolytic anemia in a case of SARS CoV2 infection without respiratory involvement: a new dimension of COVID-19

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## ABSTRACT

Severe acute respiratory syndrome coronavirus-2 (SARS CoV-2) infection is a predominantly respiratory illness with variable organ involvement. Hematological changes are an important manifestation and anemia is usually autoimmune in origin. It is easily identifiable and treatable complication. In absence of tell tail sign of COVID-19 infection high index of suspicion is required with prompt testing. Our patient presented as case of autoimmune hemolytic anemia with no evidence of COVID-19 infection and tested after ruling out common causes in Indian setting. He responded to steroid therapy and viral clearance.

**Keywords:** Autoimmune hemolytic anemia, COVID-19, India, Steroid

## INTRODUCTION

Severe acute respiratory syndrome coronavirus-2 (SARS CoV-2) infection is a known respiratory illness with occasional multisystem involvement. The disease is characterized by presence of fever with dry cough, running nose and myalgia. In moderate to severe cases shortness of breath and organ involvement is characteristics. Non-respiratory symptoms as sole manifestation is uncommon and pose a diagnostic challenge.<sup>1</sup> Hematological changes are common but its immune complication is still rare with immune thrombocytopenia as the highlight.<sup>2</sup> Autoimmune hemolytic anemia is uncommon and requires high index of suspicion in absence of tell tail signs of SARS CoV-2 infection.<sup>3</sup>

## CASE REPORT

31-year-old male, professionally a cab driver presented with generalized weakness and reeling for 3 days. He

consulted a physician and was asked to do routine blood tests and to take oral rehydration salt (ORS) and some vitamins. His condition deteriorated and was admitted to a nearby hospital.

In the hospital investigations revealed a picture of macrocytic anaemia with leucopenia and indirect hyperbilirubinemia. Extensive questioning did not reveal any past history of jaundice, blood transfusion or any bleeding problem or liver disorder in family. Due to a major lockdown in SARS CoV-2 era he was not driving but admitted to go out on some occasions for buying house hold items. He was put on symptomatic medicines and evaluation was started. As a provisional diagnosis of hemolytic anaemia, peripheral blood smear showed polychromasia, spherocytes and coombs test was positive for IgG and C3. Patient's C reactive protein (CRP) was 76 ng/dl, Lactate dehydrogenase (LDH) was 2450 whereas serum iron, ferritin were 128 micogm/dl and 405 ng/ml respectively. Further, vitamin B12 >2000 pg/ml while folic acid was 3 ng/ml. In addition, Hepatitis B

surface antigen (HbsAg) and anti-HCV IgG were non-reactive. In view of hemolytic anemia high performance liquid chromatography and malaria parasite was send and both came negative. IgM for dengue, chikunguniya, scrub typhus and Epstein-Barr virus viral-capsid antigen (EBV VCA) came negative. Meanwhile the patient started to complain of excessive reeling and his hemoglobin dropped significantly from 7.1 gm/dl to 5.9 gm/dl in a mere short span of 2 days. He was given packed red blood cells (PRBC), and no evidence is active bleeding was found. Ultrasonography (USG) of whole abdomen showed evidence of splenomegaly while the chest X-ray (CXR) was within normal limits. He was started on tablet prednisolone 50 mg once daily. Keeping in mind the current epidemic of COVID-19 and absence of a cause, the reverse transcription-polymerase chain reaction (RT-PCR) test for SARS CoV2 was ordered from nasopharyngeal sample which came out to be positive.

He was shifted to COVID19 care facility and he was given 2nd packed cell transfusion, started on tab azithromycin 500 mg once a day, tab hydroxychloroquine 400 mg twice daily along with other symptomatic medicine. On 3rd day of intervention, he began to improve symptomatically and on 5th he was tested negative for consecutive samples of SARS CoV2. He was discharge with advice of 14 days home isolation. A repeat test revealed hemoglobin of 9.8 gm/dl and normal liver function test. The patient was followed up after 1 month and had no complaints with hemoglobin of 12.2 g/dl and normal ultrasound of abdomen.

## DISCUSSION

The hematologic manifestations associated with the infection ranges from leukocytosis to leukopenia, thrombocytosis to thrombocytopenia, anemia and pancytopenia<sup>4</sup>. Immune thrombocytopenia and autoimmune hemolytic anemia (AIHA) are two immune-hematological complication of SARS CoV2 infection.<sup>3</sup>

Lazarian et al found war and cold agglutinins associated with AIHA in COVID-19 whereas Hinderden et al related it to inflammatory process and by large the pathophysiology is still unclear.<sup>3,4</sup> Our patient also had elevated markers of inflammation and so inflammatory process seems to be related to our case. We ruled out

common treatable infections associated with AIHA in our settings. It took us 5 to 6 days after onset of illness to diagnose AIHA in our patient similar findings were seen in above reports of around 9 days after onset of symptoms. In both the cases patient had responded to completely to prednisolone therapy and so was our patient. The steroid non-responder was given rituximab. The absence of respiratory symptoms was not seen in any of cases and this was exclusive to ours.

## CONCLUSION

Autoimmune hemolytic anemia is a manifestation of COVID-19 and presents like from any other cause and treated as per standard protocol by steroids. In absence of common causes of AIHA COVID-19 testing should be even in absence of tell tail signs of it. It remains as easily treatable complication of COVID-19 infection.

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