ISSN: 0975-833X

Available online at http://www.journalcra.com

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

International Journal of Current Research
Vol. 14, Issue, 04, pp.21310-21311, April, 2022

DOI: https://doi.org/10.24941/ijcr.43402.04.2022

RESEARCH ARTICLE

"COVID-19 INFECTION A TRIGGER TO COLD AGGLUTININ HEMOLYTIC ANEMIA"

Gauba Shilpi[1,*], Bhardwaj Abhinav[2], Gauba Rajat[3], Gupta Albee[4]

[1]Gauba Pathology lab, Kaddam Multispeciality Hospital
[2]Department of Medicine, kaddam Multispeciality Hospital
[3]Department of Radiology, kaddam Multispeciality Hospital
[4]Department of Medicine, School of medical sciences and research, Sharda University

ARTICLE INFO

Article History:
Received 29th January, 2022
Received in revised form
19th February, 2022
Accepted 19th March, 2022
Published online 30th April, 2022

Keywords:
Covid-19, Cold Agglutinin, Immune.

**Corresponding author:*
Gauba Shilpi

ABSTRACT

Cold agglutinin antibodies are autoantibodies causing hemolysis at a lower temperature which can be triggered by various infections like covid-19, mycoplasma pneumonia and numerous other virus causing flu like symptoms. Cold agglutinin antibodies cause multisystem immune mediated dysfunction;haematological and circulatory are the major ones affected. Presently, no definite treatment is available for immune mediated cold agglutinin disease secondary to covid 19 infection.

Citation: Gauba Shilpi, Bhardwaj Abhinav, Gauba Rajat, Gupta Albee. *"*Comparison of the Dimensional Accuracy of Splinted and Unsplinted Impression Techniques for Multi-unit Abutment-An Invitro Study", *2022. International Journal of Current Research, 14, (04), 21310-21311.*

INTRODUCTION

Corona virus infection causes numerous systematic complications like thrombo-embolism ARDS and varied renal manifestations. Coldagglutinin is a variant of autoimmune hemolytic anemia (extravascular type) causing hemolysis at a low temperature. We present a case report of an elderly male presenting with cold agglutinin hemolytic anemia as a complication ofcovid infection with no significant comorbities in the past.

CASE REPORT

A 80 year old male patient presented to the emergency with 5 days history of fever, worsening shortness ofbreath, laboured breathing and extreme lethargy. On examination patient was found to be ferile -101.8° f,blood pressure of160/90 mmhg. Respiratory rate 26 beats/min with 88% spo2 on high flow oxygen. On physical examination, patient was found to be pale with mild icterus and B/L coarse crepts in all the areas of chest. No significant hepatosplenomegaly was seen. CECT Chest revealed-Multifocal areas of ground glass opacities and septal thickening in both lung fields (Fig.1). Routine blood investigation and rapid antigen test for covid was done. Patient was tested positive for covid-19. Laboratory findings revealed anaemia with reduced hemoglobin, hemotocrit and markedly RBC indices (MCV- 73.9, MCH-64.2 ,MCHC -86.9). Peripheral smear examined shows marked RBC agglutination (figure. 2) with presence ofpolychromasia and few elliptocytes and schistocytes. Further, the blood sample was incubated at 37°c and immediately run in fully automated analyser. Value of RBC indices was further reduced. Peripheral smear examined from the incubated sample showed complete absence ofagglutinates (figure 3).

Image 1. Cect chest showing multifocal ground glass opacity

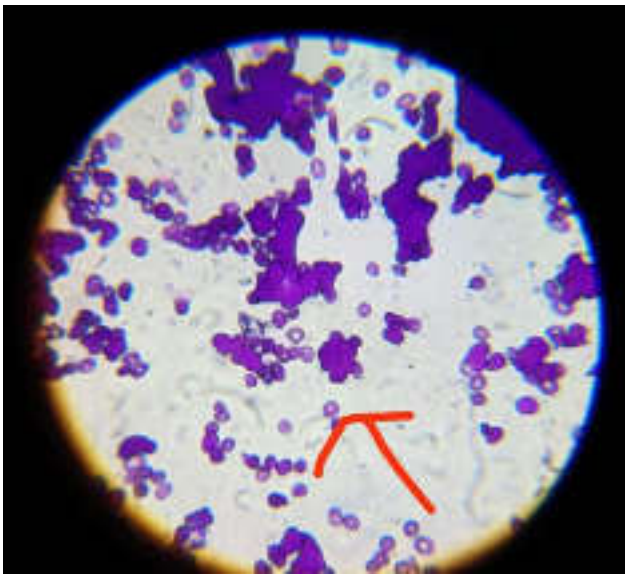

Image 2. Marked Rbc Agglutination In Peripheral Smear

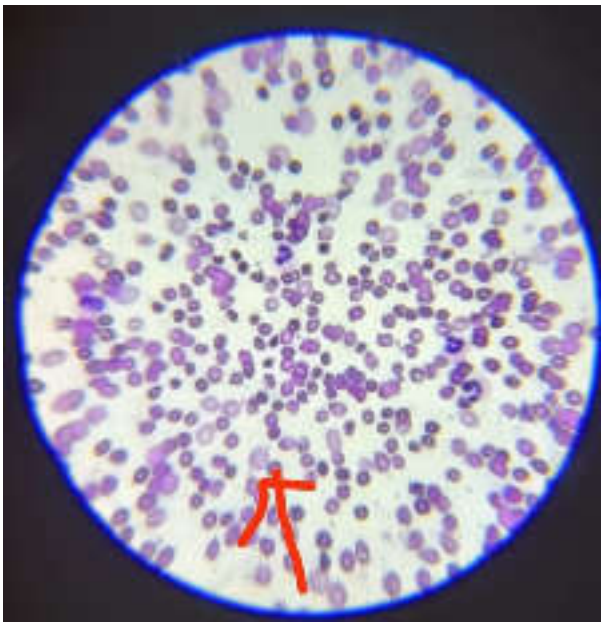

Image 3. Absence of rbc agglutinates after incubating at 37°c

Thus a provisional diagnosis of cold agglutinin -haemolytic disease was made and further follow up investigations were done which shows raised total billirubin 2.10 mg/dl, LDH - 1058 u/l, Procalcitonin 2.83 ng/ml, CRP 88.3 mgm/l and d-dimer was 2.1 mg/dl. The PT/INR and APTT were within normal limits. Direct Coombs test was positive. Cold agglutination titre were elevated to 1:160 titre. Urine analysis shows positive albumin(++) and blood(+++). Thus, it was concluded to be a case of cold agglutinin Hemolytic anemia triggered by covid-19 infection in a previously asymptomatic patient. The patient was admitted and blood transfusion with pre warmed pRBC-2units was done along with symptomatic covid treatment and high flow oxygen.

DISCUSSION

The case report mentioned above signifies the present of cold agglutinin antibody in a previously healty male diagnosed with covid infection and presenting with severe acute anemia. A study by Christopher E [(1)] presented a similar case report of 2 patients presenting with cold AIHA which precipitated after covid infection. Another case reported by Prabheshin et al [(2)]described covid 19 infection to be associated with multiple organ dysfunction due to immune mediated phenomena. Many studies [(3)] have shown the presence of similar antibodies post mycoplasma and influenza infection- H1N1 but the titre remains low in such cases. These antibodies causes a lot of misinterpretation and difficulties in processing the sample as pre warming the sample at a particular ambient temperature can lead to various diagnostic challenges.

CONCLUSION

It was concluded that the antibody titre of patient with cold agglutinin in covid 19 is a predictor for disease severity and presents a strong correlation with laboratory parameter. The acute changes in hb is associated with severe hemolytic changes which is caused by SARS-COV 2 infection. Thus, early diagnosis of such cases can reduce the incidence of disease severity.

REFERENCES

1. Christopher E. 2020. Jensen' Samuel Wilson. Cold agglutinin syndrome as a complication of Covid-19 in two cases. *Clinical Infection in Practise*., Vol 7-8,100041
2. Kumarihamy P, Gunaratne S, Ratnayake A, Abeysinghe H, Perera S. *et al.* 2021. A Case of COVID-19 Infection Associated with Severe Cold Agglutinin Autoimmune Haemolytic Anaemia. Clin Med Rev Case Rep 8:358. doi.org/10.23937/2378-3656/1410358.
3. Jasmeet Kaur, Swathi Mogulla, 2021. Transient Cold Agglutinins in a Patient With COVID-19. Jan 17;13(1):e12751.

****