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322.DISORDERS OF COAGULATION OR FIBRINOLYSIS: CLINICAL AND EPIDEMIOLOGICAL

Factor V Inhibitor in COVID-19 an Unusual Presentation

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Introduction : A huge variety of haematological manifestations and derangements have been frequently published with COVID-19 infections, however Factor V deficiency and COVID-19 infection has not been documented. We are reporting a case of acquired Factor V deficiency due to inhibitor caused by COVID 19 infection **.** Factor V deficiency is a rare bleeding disorder having either inherited or acquired forms. Acquired factor V deficiency (AFVD) can present at any age, with the manifestations ranging from abnormal deranged PT/PTT to serious bleeding and quite often challenging to diagnose. The risk factors for development of inhibitors include surgical procedures, Hepatitis, antibiotic, Urinary tract infections, blood transfusions, haemodialysis, malignancies like multiple myeloma, amyloidosis and autoimmune disorders. Around 30% of cases of AFVI are found to be idiopathic. Studies suggest that there is a temporal Connection between SARS-CoV-2 infection and the development of coagulopathy. This could be possible since COVID -19 infection is well associated with autoimmune coagulation abnormalities such as lupus anticoagulant, antiphospholipid antibodies, and venous thromboembolism. The precise mechanisms behind the relationship between Covid19 infection and development of Factor V deficiency is not fully understood. SARS-CoV-2 infection induces a proinflammatory state causing endothelial damage, platelet activation and hyperviscosity. We suggest that the factor V inhibitor was formed in the setting of immune dysregulation from the underlying COVID-19 as coagulation profile was normal before admission to hospital.

Result and method: A 62 year old gentleman with background of dyslipidemia and IBS was admitted to the hospital with asymptomatic COVID pneumonia. The patient was started on Lopinavir-Ritonivir 500mg BID and enoxaparin 40mg OD. Upon routine testing patient was found to have a deranged coagulation profile (PT: 41.9sec/APTT: 104.7sec/INR: 3.5/Fibrinogen: 3.04gm/L/ D-dimer: <0.30mg/L FEU). Daily results kept showing a steady rise of coagulation parameters (PT: 46.5sec/APTT: 122.0sec/INR: 3.9) however the patient was asymptomatic. Results demonstrated severe factor V deficiency (<5.7%) with mildly reduced Factor VII (53.8%) and a mildly elevated factor VIII (195.4%). PT and APTT mixing studies showed no correction of the prolonged clotting times before and after 2 hours incubation, hence the failure of correction suggested the presence of an inhibitor for which Bethesda test for Inhibitor's titer and autoimmune screening were sent. Considering the Factor V inhibitor deficiency with background of active COVID-19 infection and to prevent bleeding complications, the patient was started on Inhibitor eradication therapy with Dexamethasone 20 mg, and Immune globulin intravenous 45 gm. Inhibitor titers came back positive for an inhibitor level of 9 BU/ml. Autoimmune screen for ANA and anti-B2 glycoprotein came back negative. Malignancy was ruled out. Throughout the hospital stay , we did not encounter any bleeding manisfestions or drop in haemoglobin. Since the patient had a previous record of normal coagulation profile in 2019, a diagnosis of COVID-19 infection-related Factor V deficiency with inhibitor was made. After a four-days course of inhibitors eradication, PT INR and aPTT started coming down with no significant complications, the patient was discharged on oral prednisolone and vitamin K. Follow up in the clinic after 3 weeks showed complete normalization of coagulation profile.

Conclusion:

A wide range of haematological manifestation have been reported with COVID-19 infection, but the association of Factor V deficiency due to inhibitors and COVID-19 infection have not been reported in the literature earlier. Treatment will be focusing on treating the primary cause and eradication of the inhibitors.

Disclosures No relevant conflicts of interest to declare.

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