COVID-19 AND ITS IMPACT ON SICKLE CELL DISEASE

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Introduction

Patients with sickle cell disease (SCD) are considered high risk because of underlying comorbidities such as decreased immunity due to functional hyposplenism, renal impairment, and cardiopulmonary dysfunction. SCD also increases the risk of having severe COVID-19 infection and poor outcomes in all age groups. COVID-19 increases RBCs' sickling, inflammatory responses, enhances the vaso-occlusion, and subsequently, causes thrombosis of small vasculature of pulmonary parenchyma, brain, and small joints leading to acute chest syndrome (ACS), ischemic stroke, and painful vaso-occlusive crisis, respectively.

Results

Diagnosis of COVID-19 in patients of SCD is difficult due to the overlapping of presenting symptoms of SCD complications such as ACS, pneumonia caused by different pathogens, and pulmonary embolism. However, the pulmonary infiltrates caused by COVID-19 are denser than that of those caused by ACS or pneumonia on Chest X-ray and CT chest. It is fundamental to evaluate these patients for the COVID-19 and the other complications of SCD. Many recent case reports in the literature have shown that the early identification of the diagnosis and exchange transfusion can prevent fatal consequences in these patients.

Conclusion

To summarize, COVID-19 infection can cause severe complications in these immunocompromised patients. However, prompt diagnosis and treatment with exchange transfusion can reduce the severity and decrease the mortality and morbidity of this infection. The data on the effects of COVID-19 on SCD patients is minimal; hence, future research is crucial.