A 34 Year old Male With Severe SARS-CoV2: Treatment Strategies, Eight Month Follow-up and Vaccination Response

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Abstract

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Clinical report and treatment strategies

A 34 year old male presented on June 1, 2020 with self-reported SARS-CoV2-like symptoms of more than 10 days including fever, reduced or lack of smell, lethargy and bone pain[1] . The patient had self-medicated with Moxifloxacin (400mg/d), Paracetamol (1000mg/d) and Antihistamine. Upon arrival at the hospital, the patient wanted a antiviral therapy for SARS-CoV2 infection but we refused as no patent SARS-CoV2 symptoms such as fever were obvious although there were slight symptoms of throat allergy but no cough. Chest X-ray was normal and complete blood count showed slightly elevated WBC count. We prescribed Clarithromycin (500mg/od) and Montelukast sodium (10mg/od) for 6 days but the patient returned after three days with high fever (104F), dizziness, lethargy and fatigue. Given that local shortages of antiviral medicines, he was prescribed Artemether/Lumefantrine 80/480mg as Gen-M (Antimalarial drug), Ceftriaxone 1g, Dexamethasone IV for three days along with Paracetamol 100mg and Montelukast sodium 10mg/od[2] . This combination of medicines has proven highly effective in our attended pool of patients with mild or moderate symptoms of SARS-CoV2. However, in this case, the symptoms progressed over the next six days with X-ray examination showed complete chest congestion and damaged lungs. The patient also reported difficulty in breathing, which exacerbated over the next three days where we observed a drop in oxygen saturation to below 70%. The patient refused to stay in the central COVID-19 facility in our hospital, and we therefore advised home isolation with medication of third generation antibacterial Gemifloxacine 320mg and Montelukast sodium 10mg. Cough syrup and oxygen was also supplied and the patient also self-medicated with natural herbs for sore throat relief.

The patient was brought back to hospital after two days, almost unconscious, bluish skin (probably due to low oxygen) and blood clotting, inverted nails, diarrhea and difficulty in breathing and speaking. Oxygen levels dropped to below 25%, we referred him to the central COVID-19 facility where he was kept on continuous supply of oxygen at an extreme care unit for several days then moved to the normal isolation, still with continuous oxygen. He was prescribed with paracetamol IV, Ceftriaxone 1g/ IV, Dexamethasone IV twice a day and Azithromycin 0.5g/IV, Omeprazole 40mg IV once a day, Enoxaparin sodium IM as blood thinner[2,3]. In addition, Nitazoxanide was prescribed for three days to control viral diarrhea. Azithromycin IV was discontinued because of severe reactions including vascular pain, cold, shivering and neck twisting, and it was replaced with oral Azithromycin 500mg/OD for two weeks. However, we found that his serum has extremely high level of inflammatory and liver function markers. The patient also reported severe insomnia and we prescribed Alprazolam (0.5mg). Moreover, the patient was also advised to take Vitamin D3 5000IU, Multivitamins and Montelukast sodium 10mg daily. He was kept on the same treatment for 18 days then discharged from hospital after having satisfactory reports. He was advised to take complete bed rest for two weeks since his muscles were weak and body weight was reduced. Upon his discharge from the hospital, as part of home treatment he was prescribed tapering doses of Prednisolone; 20mg od 5 days, 10 mg od 5 days, 5mg od 5 days, together with Moxifloxacin 400mg od 5 days, omeprazole 40mg od for two weeks, multivitamins and Alprazolam 0.5mg for one month. Patient felt difficulty in breathing and chest pain after completing the prescribed course of Prednisolone. Upon re-examination, chest X-ray indicated inflammation in the lungs and pulmonary edema. This condition prompted us to advise a combination of steroidal anti-inflammatory drugs Betamethasone and Spiromide 20mg daily for one month, which helped the patient recover from fibrosing lung disease, bronchoconstriction, lung inflammation and pulmonary edema. However, he faced continuous breathing difficulties and failed to walk freely, taking three months to achieve symptomatic relief from this illness. Apart from physical anomalies, the patient also developed psychiatric stress symptoms in the post hospitalization period.

After 8 months, the patient resumed normal daily life activities and was asymptomatic except for loss of smell sensitivity. Examination of blood for the presence of antibodies showed strong signals for SARS-CoV2 IgG, indicative that patient had developed immunity against COVID-19.

The patient also volunteered to receive COVID-19 (Sinovac from SinoPharm) vaccination and interestingly, upon administration, showed a short term reaction with headache, fever, nausea and restlessness lasting for 12-24 hours. This fast reaction to the vaccine suggests that available IgG antibodies in his blood strongly responded to high dose of inactive pathogens.

In conclusion, despite having extensive care and treatment, the patient initially showed mild to moderate symptoms followed by severe SARS-CoV2, as previously described for another patient[4] . Survival rates for such cases are extremely low especially once oxygen saturation levels fall below 25%. Based on this extreme case, we hypothesize that second and third generation antibacterial drugs represent good options for coping with opportunistic bacterial infections accompanying SARS-CoV2 infection along with supplemental oxygen therapy and SAIDs. Therefore, we believe timely treatment to prevent opportunistic bacterial infections provides time for natural immunity development against SARS-CoV2 as we observed in the current patient. Moreover, a long-term care is required for patients with severe acute respiratory syndrome (category three SARS-CoV2). It is highly recommended that a combination of steroidal anti-inflammatory drugs be given to patients for a month or longer for complete recovery. Moreover, complete bed rest is necessary along with 30 minutes daily walk and physiotherapy for at least for two weeks.

Ethical statement

Informed written consent was taken from the patients for including in the treatment strategies. Study was conducted by strictly adhering to guidelines of Helsinki deceleration 1964 and it latest comparable ethical standards.

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