DENGUE FEVER IN THE ERA OF COVID-19 PANDEMIC

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ABSTRACT

COVID-19 is an ongoing pandemic with similar clinical manifestations to other infectious diseases. Until this day there is no exact guideline for the diagnosis and treatment of COVID-19. This case report describes a dengue fever case in a patient with high risk of COVID-19 infection. Rapid detection of this disease helps patients to receive early treatment and also contain the spread of the disease. Due to similar initial symptoms and lab results, a nasopharyngeal swab is recommended on the fifth day of fever, due to high viral load on said days. Clear anamnesis and accurate interpretation of lab and radiologic modalities helps avoidance of unnecessary early medications for COVID-19

Keywords: COVID-19, dengue fever, viral infections

ABSTRAK

COVID-19 merupakan pandemi yang masih berlangsung dengan manifestasi klinis yang serupa dengan penyakit infeksi lain. Hingga kini belum ada panduan untuk diagnosis dan tatalaksana COVID-19. Laporan kasus ini menggambarkan pasien demam dengue dengan faktor risiko tinggi untuk infeksi COVID-19. Deteksi cepat penyakit ini membantu pasien mendapatkan tatalaksana dini dan juga mencegah penyebaran penyakit secara luas. Dengan gejala awal dan hasil laboratorium yang serupa, disarankan untuk dilakukan *swab* nasofaring pada hari kelima demam, di saat *viral load* sudah tinggi. Anamnesis yang tajam dan interpretasi akurat dari hasil laboratorium dan radiologi membantu mencegah diberikannya pengobatan awal yang tidak perlu untuk COVID-19.

Kata kunci: COVID-19, demam dengue, infeksi virus

INTRODUCTION

The Coronavirus disease or COVID-19 first hit China in December 2019, quickly spread throughout the world in the next months, and was declared a pandemic in March 2020. Its clinical manifestations which mimic other common respiratory diseases make it difficult to confirm as a diagnosis in its early stages. This case report describes a case of dengue fever in a patient with high risk of acquiring COVID-19, aiming to help medical professionals distinguish the two conditions and administer early treatment to prevent patients falling to more serious conditions.[1]

CASE ILLUSTRATION

A 60-year old woman presented with fever 4 days prior to admission, accompanied with joint pain and low appetite. She declined cough, congested nose, and sore throat. Fluctuations in body temperature was observed. On the fourth day, temperature was 39^0C, accompanied with shivering. Patient stated indirect contact with a suspected COVID-19 patient.

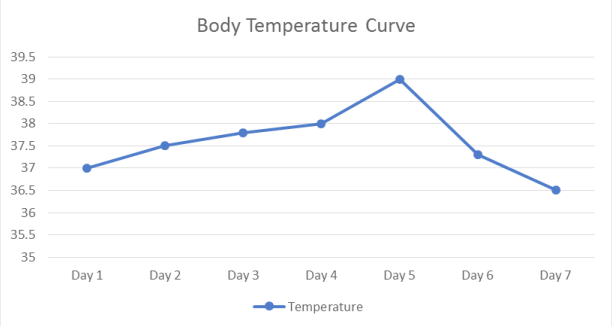

Figure 1. Patient's body temperature fluctuation

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Physical examination were within normal limits. Lab work was done on the fourth day of fever. Complete blood count revealed leucopenia (3800/µL) and lymphocytopenia (15%). Chest x-ray within normal limits. Anti-Salmonella IgM negative while anti-dengue IgM was positive. C-reactive protein level was 29,1 mg/L. Patient was sent to isolation ward, diagnosed with dengue fever and also a suspected case of COVID-19. Nasopharyngeal swab was performed for SARS-COV2 and viral influenza. Two days monitoring during hospitalization, fever resolved and lab results showed increase in leucocyte and thrombocyte counts. Swab test revealed negative results. Patient has moved to regular in-hospital ward. Fifth day of hospitalization, fever diminished, leucocyte levels were normal (6.610/µL) and thrombocyte levels increased (128.000/µL). Patient was discharged from hospital.

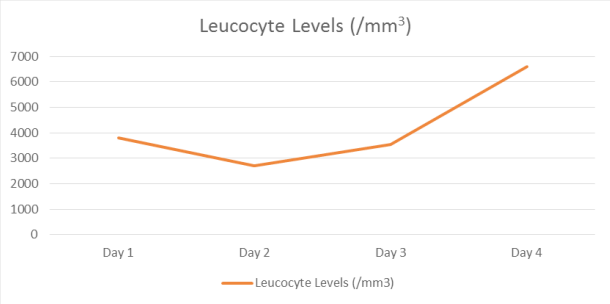

Figure 2. Patient's leucocyte levels during hospitalization

DISCUSSION

Earlier this year, the world was struck with the Coronavirus, also known as SARS-COV2 or COVID-19. The outbreak started in the city of Wuhan (Hubei Province, Republic of China). Its human-to-human transmission made the disease spread rapidly and widely throughout the globe, regardless of age, gender, and presence of comorbid. COVID-19 is transmitted by droplets from coughing, sneezing, or talking in a distance less than 1 meter. Common clinical manifestations include fever, dry cough, and dyspnea.

Rapid detection of this disease helps patients to receive early treatment and also contain the spread of the disease. For these reasons, health care facilities everywhere have started to conduct screening procedures for COVID-19. Any individual with fever, coughing, dyspnea, and history of travelling/visiting areas endemic of this disease should be suspected of COVID-19. It can mimic other respiratory and infectious diseases such as dengue fever, bacterial pneumonia, gastroenteritis, to name a few.

The patient in this case is a radiologist working in a national referral hospital and interacts regularly with patients, residents, and other hospital staff. Acute fever, in this pandemic makes it a normal precaution to evaluate for any kind of COVID-19 infection, even though patient had no cough, runny nose, loss of smelling sense, or any respiratory symptoms, because some of the symptoms might be under-reported by patients.

COVID-19 is a newly emerging disease which the world still continues to study. Initially it was said to be similar to bacterial pneumonia, but nowadays clinical manifestations are becoming more and more unclear and may mimic other viral diseases. The majority of cases are mild and recover within 1-2 weeks. However, patients who are middle-aged or elderly, have pre-existing conditons (tumors, cirrhosis, hypertension, chronic heart disease, diabetes, or Parkinsons), or are under long-term immunosuppressive therapy might fall into severe conditions and die.[2] COVID-19 has an incubation period of 2-14 days (median is 5 days). During this period, leucocyte and lymphocyte levels are usually normal or slightly decreased. In the next phase, the virus spreads through the blood (allegedly on tissues that express ACE2) such as the lungs, digestive tract, or the heart (symptoms are mild). The second attack happens 4-7 days after initial symptoms. In this period, fever still persists and the patient starts to feel difficulty in breathing, lung lesions worsen, and lymphocyte levels decrease, inflammatory markers increase and hypercoagulation occurs. If this is not controlled, a cytokine storm happens which will lead to ARDS, sepsis, and other complications.[3] In dengue fever, most patients present with acute fever in the first few days, accompanied with non-specific symptoms such as headache, fatigue, epigastric pain, nausea, skin rash, retro-

orbital pain, and joint pain.[4] Our patient did not show any typical clinical manifestations of COVID-19 infection and hence dengue fever treatment was proceeded.

In viral infections, blood count commonly reveals leucopenia, lymphocytopenia, and thrombocytopenia. C-reactive protein levels can be predictive in early stages of diseases and to predict prognosis. Studies of COVID-19 revealed increase in CRP levels parallel to and were also positively correlated with lung lesions diameter and severe presentation. Due to similar initial symptoms and lab results, patient had a nasopharyngeal swab on the fifth day of fever, due to high viral load on said days.[5] Further evaluation for COVID-19 in this patient revealed normal chest x-ray, and negative nasopharyngeal swab but was positive for Anti-dengue IgM and increased CRP level. Rapid antibody test was not performed. Resolution of clinical manifestations without administration of COVID-19 therapy infers that this case is purely dengue fever

CONCLUSION

Clinical manifestations of COVID-19 and dengue fever are similar. Clear anamnesis and accurate interpretation of lab and radiologic modalities helps avoidance of unnecessary early medications for COVID-19.

CONFLICTS OF INTEREST

There is no conflict of interest

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