

COVID-19 Decimate from Elderly Smoker Male within 19 Days: A Case Report

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Abstract

At the end of 2019, a number of pneumonia cases have been reported in Wuhan, China, a novel coronavirus (SARS-CoV-2) was quickly identified as a potential etiology. Coronaviruses are known to cause infection mostly in the respiratory and gastrointestinal tract in human and highly contagious person-to-person transmission.

Elderlies, smokers and individuals with chronic illnesses are more susceptible to COVID-19 and are more likely to have complications such as pneumonia and even death. However, we reported a smoking elderly with hypertension infected with COVID-19 confirmed by rRT-PCR that recovers without having signs and symptoms. Lymphopenia, which considered a danger signal for COVID-19 patients, has been detected from the patient and he remains healthy during the course of infection. We believe several factors may involve that our patient did not have any symptoms one of them might be BCG.

We notice quarantine and isolation are effective in the identification and prevention of the spread of SARS-CoV-2 in population. We suggest that early diagnosis of COVID-19 is a key to preventing death. Since there is not active vaccine or treatment Immunity plays the greatest role in eliminating the infection. So boosting immunity is critical as many studies suggest.

Key-words: SARS-CoV-2; COVID-19; Coronavirus; Elderly

Introduction

At the end of 2019, a number of pneumonia cases have been reported in Wuhan, China, a novel coronavirus (SARS-CoV-2) was quickly identified as a potential etiology. Coronaviruses belong to coronaviridae family which are enveloped non-segmented positive-sense RNA. Coronaviruses are known to cause infection mostly in the respiratory and gastrointestinal tract in human. Since epidemiological investigations revealed highly contagious person-to-person transmission of

SARS-CoV-2, with a certain mortality rate^{1,2} the World Health Organization declared a public health emergency of international on 31th of January 2020. As of March 31, 2020 over 754,948 confirmed cases of COVID-19 have been reported worldwide with 36,571 confirmed death³.

The majority of the patient's symptoms were fever and cough other symptoms include shortness of breath, fatigue, runny nose, sore throat and diarrhoea. The incubation period of SARS-CoV-2 is generally 3–7 days but no longer than 14 days in rare cases 20-27 days, and the virus is infective during the incubation period⁴.

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Currently there is no active vaccine or/and drug that can be used for prevention or/and treating COVID-19 disease. Many antiviral drugs have been used in vitro and were effective against the SARS-CoV-2 virus. However,

none of them were effective against active infection and did not stop viral replication and dissemination ⁵.

Case Presentation

On March 9, 2020, a 67 years old male was quarantined for having contact with confirmed SARS-CoV-2 carrier. After two days of exposure he got the virus confirmed by rRT-PCR of a nasopharyngeal and oropharyngeal swabs. He has disclosed that he smokes cigarette and medical history show that he has hypertension with no history of other chronic illnesses. According to WHO's standards every three days the test was repeated all show positive until March 30, 2020, the rRT-PCR show negative for SARS-CoV-2. The test was

repeated after 24 hours and was negative again. During that time he did not experience any discomfort, his vital signs were normal and surprisingly, he did not show any symptoms including fever and cough. Moreover no treatment has been used except supplements vitamin C and D. At the time of discharge a blood test (complete blood count CBC) was performed to check his blood parameters. The test was normal for all parameters as shown in table 1 except for Granulocyte that was higher than the normal range and lymphocyte percentage that was lower than the normal range. After discharge on 31 March, he put under surveillance and quarantine at home, this will continue for 14 days and he will be tested and followed up regularly.

Table 1 represent the CBC of the patient before discharge

Parameters	Result	unit	Normal range
White blood cell count (WBC)	11.9	10 ³ /μl	4.0 – 12.0
lymphocyte (LYM)	2.0	10 ³ /μl	1.0 – 5.0
Monocyte (MON)	0.7	10 ³ /μl	0.1 – 1.0
Granulocyte (GRA)	9.2 H	10 ³ /μl	2.0 – 8.0
lymphocyte (LYM) %	16.7 L	%	25.0 – 50.0
Monocyte (MON) %	6.1	%	2.0 – 10.0
Granulocyte (GRA) %	77.2	%	50.0 – 80.0
Red blood cell count (RBC)	5.15	10 ⁶ /μl	4.0 – 6.20
hemoglobin (HGB)	15.4	g/dl	11.0 – 17.0
Hematocrit (HCT)	47.6	%	35.0 – 55.0
Mean corpuscular volume (MCV)	92.4	μm ³	80.0 – 100.0
Mean corpuscular hemoglobin (MCH)	29.9	pg	26.0 – 34.0
Mean corpuscular hemoglobin concentration (MCHC)	32.4	g/dl	31.0 – 35.5
Red blood cell distribution width (RDWC)	12.3	%	10.0 – 16.0
Red blood cell distribution width (RDWS)	41.6	μm ³	37.0 – 46.0
Platelet count	287	10 ³ /μl	150 – 400

Cont... Table 1 represent the CBC of the patient before discharge

Mean Platelet Volume (MPV)	8.4	μm^3	7.0 – 11.0
Plateletcrit (PCT)	0.241	%	0.2 – 0.5
Platelet distribution width (PDW)	15.9	%	10.0 – 18.0
Platelet-large cell ratio (P-LCR)	16.2	%	12.0 – 42.0

Discussion

Novel coronavirus SARS-CoV-2 is a newly identified virus that can cause upper respiratory tract infection, pneumonia even death, started from Wuhan to China then to the world. The SARS-CoV-2 can be transmitted quickly through Respiratory droplets from coughing and sneezing as well as direct contact. People are generally susceptible to the virus however elderly and people with comorbidity and chronic illnesses are at risk for severe infection.

In this study, we reported a 67 years old smoking man who has SARS-CoV-2 confirmed by rRT-PCR. He has not experienced any signs and symptoms and remained healthy. Without and treatment he recovered from the virus. As the CBC showed the lymphocytes percentage was low at the time of discharge, similar situations have been seen in China. Lymphopenia happen in the elderly patients who are smoking and/or have hypertension ended up with pneumonia and death⁶. Lymphopenia consider danger sign as any study suggest having lymphopenia predict more severe form of infection, pneumonia or even death especially for elderly individuals⁷. However, in our case he did not even have mild symptoms nor pneumonia.

Several factors might be involved that our patient did not have any symptoms considering his old age, hypertension, smoking and lymphopenia. First of all, our patient did not have chronic illnesses except for hypertension. As Leung suggests that there is no exclusive evidence to support that hypertension can cause a more severe form of infection or an increased risk of mortality. In contrast diabetes might be associated with mortality⁸.

Secondly, physiology, host reaction and immunity play a major role in the severity of COVID-19 infection

and mortality rate. We notice the immunity of people in our region (Kurdistan/Iraq region) is high compared with other countries as the data by the ministry of health show a total of 496 confirmed cases with only 5 death and 403 recovery on May 25. According to ministry of health in Kurdistan Region none of the dead ones were due to corona virus infection or complication⁹. Another factor that may affect immunity is temperature and humidity, our region have higher temperature and lower humidity comparing to Europe countries. As higher temperatures decrease the incidence rate it might also affect the viral replication in a host as well as support better host reaction¹⁰. Another factor that might provide stronger immunity is dietary supplements such as vitamins C and D which proven to have a role in supporting the immune system¹¹.

Finally, recent studies suggest childhood vaccination plays a great role in that most infected children seemed to have a milder clinical course especially bacillus Calmette-Guérin (BCG)¹². BCG proved to produce cross-immunity not only against tuberculosis but also against viral infection¹³. The mechanism is unclear but BCG may boost the immune system against COVID-19. Our patient has received BCG as a standard immunization.

Conclusion

In conclusion, novel coronavirus SARS-CoV-2 is a very dangerous virus that affects health with a highly contagious rate. Elderlies and individuals that have chronic illnesses are at risk for severe forms of infection and even death. We notice quarantine and isolation are effective in the identification and prevention of the spread of SARS-CoV-2 in population. We suggest that early diagnosis of COVID-19 is a key to preventing transmission and death. Since there is not active

vaccine or treatment Immunity plays the greatest role in eliminating the infection. So boosting immunity is crucial as many studies suggest and BCG might be effective.

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