Trump's covid-19 treatment: Can we offer it to other patients in the world

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Abstract

Background: Covid-19 is a viral illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease was first reported during December, 2019, in Wuhan, Hubei in China. On Thursday, the first of October 2020, the White House of the USA declared that the president of the USA, Donald Trump had a positive test for SARS-CoV-2. He initially had mild symptoms which included mostly, hoarseness, lethargy, and fatigue. The treatment received by a patient "Donald Trump" who was considered the most powerful person in the world is studied, and this paper assumed that all the patients in the world are as important as Mr. Trump and tries to offer the best evidence-treatment for them.

Patients and methods: Most media including the CNN television channel rightly confirmed that Mr. Trump has been treated by the best doctors in the world with best therapies that could possibly help him in defeating the virus. The CNN, in various programs during the first week of October, emphasized that, American citizens with Covid-19 are not receiving the same treatments as their president Donald Trump.

Results: Trump aged 74 years and initially had mild symptoms which included mostly, hoarseness, lethargy, and fatigue. His age, obesity and mildly elevated cholesterol were considered risk factors that may reduce the likelihood of having very favorable outcome. It was reported that he initially took hydroxychloroquine, an anti-malarial drug. The use of a therapeutic approach including experimental antibody therapy, remdesivir and dexamethasone has not been reported as a treatment for one patient before other than Mr. Trump. Obviously, of the three important therapies, only dexamethasone can be offered to almost all the patients with covid-19.

Conclusion: It seems that, the most important factors that made treatment of Donald Trump effective and successful are:

1-The early institution of therapy regardless of the generally accepted recommendations.

2-The use of multiple drugs as none of the available drug alone can guarantee successful treatment.

Keywords: Trump's covid-19; evidence-based therapies; medical ethics

Introduction

Covid-19 is a viral illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease was first reported during December, 2019, in Wuhan, Hubei in China [1, 2, 3].

There are four genera of coronaviruses including alpha-coronaviruses, beta-coronaviruses, gamma-coronaviruses, and delta -coronaviruses. Alpha and beta-coronavirus can infect mammals, while gamma-coronavirus and delta-coronavirus generally infect birds.

Four coronaviruses are known to cause mild upper respiratory infection in humans of all ages including infants. The transmission of coronaviruses from animals (birds) to causes respiratory illness has been reported as

early as 1969 by Kapikian et al. Community-wide outbreak associated with 229E-like coronavirus has be reported as early as 1970 by Cavallaro and Monto. Until December, 2020, two beta-coronaviruses (SARS coronaviruses and MERS-coronaviruses were known to cause severe, potentially fatal pneumonia-like illness [1-6].

Errors in the replication of viral genomic RNA of zoonotic coronaviruses led to the emergence of genetically related diverse quasi-species, while the transmission of some of them to a new host species led to the emergence of human severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV). SARS-CoV emerged for the first time in Guangdong China in 2002 spread rapidly to many other counties causing more than 8000 cases with about10% mortality. In 2012, it was thought that MERS-CoV was

transmitted to humans from bats through an intermediate camel host leading to 1700 cases in 27 countries with about 40% mortality [1-6].

The disease has rapidly became a worldwide pandemic, and according to the live online update available at https:// www.worldometers.info/coron avirus/ , on the 6th of October, 2020, The disease affected more than 35.5 million person throughout the world, and was associated with more than 1.04 million deaths. In a country like Iraq, many doctors died from covid-19 and persons whom were considered to be healthy and possibly having a good immunity like former football players and a bodybuilding champion [7]

The incubation period of the disease is from one day to fourteen days. The disease is commonly associated with fever, cough, fatigue, shortness of breath or breathing difficulties, and loss of smell and taste [7].

Although, most patients have mild symptoms, some patients experience acute respiratory distress syndrome possibly that is generally attributed to cytokine storm. Severe disease can be complicated by septic shock, vascular thrombosis and multi-organ failure [1, 2, 3].

Patients can infect others two days before the symptom onset and the disease can be transmitted from asymptomatic persons. Patients may remain infectious for seven to twelve days in moderate cases and up to two weeks in severe cases. The standard method for diagnosing the disease is real-time reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab [4, 5, 6].

SARS-CoV-2 has already defeated the efforts to prevent its spread and caused probably the most global pandemic in history. SARS-CoV-2 continued to infect people and to take lives without the emergence of a treatment that is confirmed to have clinically a significant effectiveness in clinical treatment. The rational scientific approach to face a potentially fatal viral pandemic with no known effective specific therapies dictate the early use of all the useful preliminary research evidence with prioritizing emphasis on safety to avoid making more harm than good in such situation[4,5,6].

Patients and methods

The treatment received by a patient "Donald Trump" who was considered the most powerful person in the world is studied, and this paper assumed that all the patients in the world are as important as Mr. Trump and tries to offer the best evidence-treatment for them.

Results

On Thursday, the first of October 2020, the White House of the USA declared that the president of the USA Donald Trump, his wife, and other White House officials had a positive test for SARS-CoV-2.

He aged 74 years and initially had mild symptoms which included mostly, hoarseness, lethargy, and fatigue. His age, obesity and mildly elevated cholesterol were considered risk factors that may reduce the likelihood of having very favorable outcome. It was reported that he initially took hydroxychloroquine, an anti-malarial drug.

In fact, during May, 2020 Mr. Trump reported that he has taken a two-week-long preventive dose of hydroxychloroquine. On Friday, Trump developed fever, marked fatigue, difficulty in breathing with some lowering of oxygen saturation, a treatment with Regeneron's experimental cocktail of two monoclonal antibodies, and remdesivir (a five-day course) was started. He received 8 g intravenous infusion of Regeneron's mixture, which is the highest dose used in the treatment of 245 individual in an unpublished clinical trial conducted by Regeneron. Regeneron's antibodies were used to treat non-hospitalized patients to augment the immune response, and possibly reduce viral load.

Trump was Hospitalized for three days at Walter Reed National Military Medical Center, and left the hospital on Monday night. On Saturday, Trump needed supplemental because of the lowered oxygen saturation and he was given two doses of dexamethasone. On the second of October, Trump's doctors also reported that he was also receiving daily aspirin, melatonin, zinc, and famotidine.

Most media including the CNN television channel rightly confirmed that Mr. Trump has been treated by the best doctors in the world with best therapies that could possibly help him in defeating the virus. Dr Sean Conley (Figure-1) was probably the most important doctor who was in charge of the treatment of Mr. Trump.

In addition, the CNN, in various programs during the first week of October, emphasized that, American citizens with Covid-19 are not receiving the same treatments as their president Donald Trump.

The use of a therapeutic approach including experimental antibody therapy, remdesivir and dexamethasone has not been reported as a treatment for one patient before other than Trump.

Figure-1: Dr Sean Conley, the most important doctor who was in charge of the treatment of Mr. Trump, was commonly described as one of the best doctors in the world. He had less than 10 scientific publications, and he dose not have an obvious score at his researchgate profile. He dose not have a profile at Scopus, Google Scholar Citation, nor dose have a profile at Semantic Scholar

Assuming that Mr. Trump is an ordinary man in this world, we will find, and that of the three medications that are considered most important, only dexamethasone can be offered to almost all the patients with covid-19 throughout the world.

However, other medications, he received such as famotidine and melatonin are also generally available for most people in the world or can be easily available for most people.

Before Trump was tested positive, and considering him at a high risk, he received oral hydroxychloroquine as a preventive measure. Trump was possibly also receiving hydroxychloroquine very early during the time when tested positive for SARS-CoV-2.

However, because of the potential occurrence of side effect that demands regular medical supervision, we recommend the use of oral azithromycin 500 mg tablets daily as a preventive measure.

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For positive asymptomatic patients, we recommend the use of oral azithromycin 500 mg twice daily or oral azithromycin 500 mg tablets daily plus low dose oral hydroxychloroquine 200 mg once daily. For patients with positive test who have mild symptoms, it will be useful to add melatonin 5 mg at night which will probably help with symptomatic control of cough and possibly help in the prevention of the cytokine storm.

When Trump developed the symptom of fever and difficulty of breathing treatment with remdesivir and Regeneron's antibody mixture was rapidly instituted before hospitalization. These two medications are generally not available for most patients throughout the world at this stage of illness.

Therefore, if Trump was an ordinary man in this world we recommend the following therapies at this stage:

1-Intravenous or intramuscular Teicoplanin in the doses suggested by Sato et al (2006) [4, 5, 6]. A loading dose of 400 or 800 mg can be given on the first day, followed by maintenance dose of 400mg.

2-Oral azithromycin 500 mg twice daily.

3-Oral Famotidine.

4-Oral melatonin 5 mg daily at night.

5-Low dose of hydroxychloroquine 200mg can also be considered in patients with health hearts.

6-Dexamethasone can be given based on the clinical judgment.

Dr. Sean Conley said "Trump has also received dexamethasone, a cheap and widely available corticosteroid that can reduce inflammation. But it also suppresses the immune system, so it's generally not recommended for Covid-19 patients unless the situation is severe".

Discussion

Trump's was given Regeneron antibody mixture despite there was no published study describing its use. However, Regeneron press reported that experiments using golden hamsters and rhesus macaques that were intentionally infected with SARS-CoV-2 were associated with reduction of the viral levels and disease pathology. Regeneron reported that in an ongoing unpublished clinical trial in individuals (asymptomatic or have moderate) who tested positive for SARS-CoV-2, Antibody treatment reduced viral load and shortened symptomatic disease in patients who did not have SARS-CoV-2 antibodies at the initiation of the study. It was not possible to enroll Trump in the ongoing unpublished clinical trial because, it randomly assigns half the participants to receive the antibodies; while the other half of the patients are enrolled in the control group and receive infusions of an inactive placebo [7].

The United States Food and Drug Administration (FDA) regulation allows minor expanded access experimental treatments and treating physicians need to request what is called "A compassionate use" of an investigational new drug for individual patients or for emergencies [7].

Remdesivir is a drug that can be given intravenously and not orally. It has an anti-viral against several RNA viruses. It has an in vitro antiviral activity against filoviruses, arenaviruses, and coronaviruses including circulating human coronaviruses HCoV-OC43, HCoV-229E, SARS, and MERS zoonotic coronaviruses. Remdesivir (GS-5734) is a monophosphoramidate prodrug of an adenosine analogue that is activated intra-cellularly to the main metabolite in plasma "GS-441524" which acts mainly by interfering with the action of viral RNA-dependent RNA polymerase and escapes proofreading by viral exoribonuclease resulting reducing in viral RNA replication [1-8].

Warren et al (2016) reported that remdesivir has an antiviral activity against multiple variants of Ebola virus and other filoviruses in cell-based assays. Nonhuman primates receiving intravenous remdesivir had

persistent nucleoside triphosphate levels in peripheral blood mononuclear cells (half-life:14 hours) and distribution to sites of viral replication in the testes, eyes, and brain. In a rhesus monkey model of Ebola virus disease, once-daily remdesivir intravenous administration of 10 mg/kg for 12 days was associated with a great suppression of Ebola virus replication and therefore protected 100% of Ebola virus-infected animals against fatal disease. Treatment also improved the clinical and pathophysiological markers, even when treatments were started three days after virus exposure when systemic viral RNA was detected in two out of six treated animals. Warren et al suggested that remdesivir important post-exposure protection against Ebola virus disease in nonhuman primates [9].

Sheahan et al (2017) showed that remdesivir can inhibit SARS-CoV and MERS-CoV replication in multiple in vitro systems, including primary human airway epithelial cell cultures with submicromolar IC_{50} values. Remdesivir can also inhibit bat CoVs, pre-pandemic bat CoVs, and circulating contemporary human CoV in primary human lung cells. In a mouse model of SARS-CoV pathogenesis, prophylactic and early therapeutic administration of remdesivir considerably decreased lung viral load and was associated with clinical improvement and also improved respiratory function [8].

Agostini et al (2018) reported that remdesivir can effectively inhibit human and zoonotic coronaviruses in vitro and in a severe acute respiratory syndrome coronavirus (SARS-CoV) mouse model. They also showed that remdesivir can inhibit murine hepatitis virus (MHV) with similar 50% effective concentration values (EC_{50}) as SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV) [8].

In animal experiment, Pedersen et al (2019) studied the safety of remdesivir, and found it safe at a dose of 4.0 mg/kg S.C q24h for 12 weeks [10].

De Wit et al (2020) described the prophylactic and therapeutic use of remdesivir in the treatment of a nonhuman primate "rhesus macaque" model of MERS-CoV infection. Prophylactic remdesivir was started 24 hours before inoculation, completely prevented MERS-CoV-induced clinical disease, potently inhibited MERS-CoV replication in respiratory tissues, and prevented the formation of lung lesions. Therapeutic remdesivir treatment started 12 hours post-inoculation was associated with an obvious clinical benefit, with a reduction in clinical signs, reduced virus replication in the lungs, and reduction of lung lesions, and its severity [11].

Wang et al (2020) reported a randomised, double-blind, placebo-controlled, multicentre trial at ten hospitals in Hubei, China. The study included 237 adults with SARS-CoV-2 positive tests hospitalized within 12 days or less from the onset of symptoms and had oxygen saturation of 94% or less on room air or a ratio of arterial oxygen partial pressure to fractional inspired oxygen of 300 mm Hg or less, and had radiological evidence of pneumonia. 158 patients were to remdesivir intravenous remdesivir (200 mg on day 1 followed by 100 mg on days 2-10 in single daily infusions). 79 patients were treated with placebo infusions for 10 days. Concomitant use of lopinavir-ritonavir, interferons, and corticosteroids was allowed.

Remdesivir use was not associated with a statistically significant difference in time to clinical improvement (hazard ratio 1·23 [95% CI 0·87-1·75]), but patients treated with remdesivir had a numerically faster time to clinical improvement than patients treated with placebo. Adverse effects were observed in 102 (66%) of remdesivir-treated patients and 50 (64%) of placebo-treated patients. Remdesivir was stopped early because of adverse effects in 18 (12%) patients, and four (5%) patients stopped placebo early [12].

Beigel et al (2020) reported a double-blind, randomized, placebo-controlled trial of treating adults hospitalized with Covid-19 with

evidence of lower respiratory tract involvement with intravenous remdesivir. 538 patients were treated with remdesivir (200 mg loading dose on day 1, followed by 100 mg daily for up to 9 additional days). 521 patients were treated with placebo for up to 10 days. Remdesivir-treated patients had a median recovery time of 11 days (95% confidence interval [CI], 9 to 12), while patients in the placebo group had a median recovery time of 15 days (95% CI, 13 to 19) [Rate ratio for recovery, 1.32; 95% CI, 1.12 to 1.55; P<0.001].

Kaplan-Meier mortality by 14 days were 7.1% in remdesivir-treated patients, and 11.9% the placebo group (hazard ratio for death, 0.70; 95% CI, 0.47 to 1.04). Serious effects occurred in 114 of the 541 patients in the remdesivir and 141 in the placebo group. Beigel et al considered remdesivir to be superior to placebo in shortening the time to recovery in adults hospitalized with Covid-19 who had lower respiratory tract infection [13].

The currently, available evidence suggests that remdesivir can be useful in the treatment of Covid-19, but its use as a mono-therapy is far from being the ultimate therapy for Covid-19. However, remdesivir was considered to be beneficial in the case of Trump because of its early use and because of the important fact that it was not used alone but in combination with other therapies [8].

Trump was also treated with dexamethasone rather early in course of the illness.

In a controlled, open-label trial hospitalized patients with Covid-19 were randomly assigned to receive oral or intravenous dexamethasone (at a dose of 6 mg once daily) for up to 10 days or to receive usual care alone [14].

2104 patients received dexamethasone and 4321 received usual care. Overall, 482 patients (22.9%) in the dexamethasone group and 1110 patients (25.7%) in the usual care group died within 28 days after randomization (age-adjusted rate ratio, 0.83; 95% confidence interval [CI], 0.75 to 0.93; P<0.001).

Patients treated with dexamethasone had lower incidence of death than that in the usual care group among patients receiving invasive mechanical ventilation (29.3% vs. 41.4%; rate ratio, 0.64; 95% CI, 0.51 to 0.81) and among those receiving oxygen without invasive mechanical ventilation (23.3% vs. 26.2%; rate ratio, 0.82; 95% CI, 0.72 to 0.94) but not among those who were receiving no respiratory support at randomization (17.8% vs. 14.0%; rate ratio, 1.19; 95% CI, 0.91 to 1.55).

This study suggested that the use of dexamethasone in patients hospitalized with Covid-19 can result in lower 28-day mortality among those who were treated with either invasive mechanical ventilation or oxygen alone at randomization but not among those receiving no respiratory support.

Chloroquine was thought to have an effect on SARS-CoV infection and spread which can be attributed to immunomodulatory effects, suppression of the production/release of TNF-α and IL-6, autophagy inhibition, and interference with the glycosylation of cellular receptors of SARS-CoV. Chloroquine may act on entry and at post-entry stages of the COVID-19 infection in Vero E6 cells [1-7].

As early as 2004, in vitro inhibition of severe acute respiratory syndrome coronavirus by chloroquine has been demonstrated by Keyaerts et al [15], and during February 2020, Gao, Tian , and Yang reported a benefit of chloroquine phosphate in SARS-CoV-2 associated pneumonia [16].

Azithromycin, a macrolide antibiotic is effective against rhinovirus, respiratory syncytial virus, and influenza virus [17, 18], and can also inhibit Zika and Ebola viruses [19, 20]. Tran et al. indicated that influenza

progeny virus replication was remarkably inhibited by treating influenza virus with azithromycin before infection [4, 5, 6, 7].

A study treated two groups of SARS-CoV-2 patients and compared the effect of treatment with sixteen SARS-CoV-2 control patients. Six patients (First group) were treated with hydroxychloroquine (200 mg, 3 times daily, for 10 days) plus azithromycin (500 mg on first day, followed by 250 mg daily for the next 4 days), 14 patients were treated with hydroxychloroquine as a single drug. On the sixth day of treatment, 100% of patients treated with hydroxychloroquine plus azithromycin (First group) experience virological cure. Only 57.1% of the patients treated with hydroxychloroquine as a single drug (Second group) and 12.5% in the control group experienced virological cure (*P* < 0.001). Thereafter, one patient, who was treated with hydroxychloroquine as a single drug (in the second group) and continued to have PCR-positive at the sixth day of treatment, received azithromycin, and experience a virological cure [21].

The recent use of Famotidine, a class A G protein-coupled receptor antagonist in SARS-CoV2 has been associated with a good outcome. The combined use of famotidine and hydroxychloroquine has been suggested and is currently being tested in an ongoing clinical trial in the United States. In the 1990s, the use of famotidine as an antiviral agent against human immunodeficiency virus (HIV) has been suggested. The antiviral effect of famotidine has been attributed to the inhibition of proteases involved in the virus replication because it can interact within the catalytic site of the three proteases associated with SARS-CoV2 replication. However, weak binding affinity of famotidine to the three proteases makes successful famotidine therapy more likely when combined with other antiviral drugs and when given intravenously [22, 23].

Hogan et al (2020) reported a physician-sponsored cohort study of the use of cetirizine (10 mg b.i.d.) and famotidine (20 mg b.i.d,) in 110 covid-19 hospitalized patients with severe to critical respiratory symptoms. Patients also received standard-of-care. Treatment was associated with a 16.4% rate of intubation, a 7.3% rate of intubation after a minimum of 48 hours of treatment, a 15.5% rate of inpatient mortality, and 11.0 days duration of hospitalization. Treatment was also associated with beneficial lowering of inpatient mortality and progression of symptoms when compared to previously reported cases of COVID-19 inpatients. Concomitant use of hydroxychloroquine was associated with worse outcomes. Hogan et al suggested that the use of cetirizine and famotidine can be a safe and effective strategy to reduce the progression in symptom severity, possibly by minimizing the histamine-mediated cytokine storm [24].

Mather, Seip, and McKay (2020) reported a retrospective, propensity-matched observational study which included 878 consecutive COVID-19 patients observed during the period from February 24, 2020, and May 13, 2020. The study aimed at comparing the outcomes in hospitalized covid-19 patients receiving famotidine therapy (83 patients, 9.5%) with patients not receiving famotidine. Famotidine treated patients were younger (63.5 ± 15.0 vs 67.5 ± 15.8 years, P = 0.021), but the two groups did not differ with in baseline demographics and preexisting co-morbidities. Famotidine treatment was associated with a lower risk of in-hospital mortality (odds ratio 0.37, 95% confidence interval 0.16-0.86, P = 0.021) and combined death or intubation (odds ratio 0.47, 95% confidence interval 0.23-0.96, P = 0.040). Patients treated with received famotidine also had lower levels of serum markers for severe disease including lower median peak C-reactive protein levels (9.4 vs 12.7 mg/dL, P = 0.002), and lower median procalcitonin levels (0.16 vs 0.30 ng/mL, P = 0.004) [25].

Janowitz et al (2020) reported a study using oral famotidine in 10 covid-19 non- hospitalized patients. Most frequently, famotidine was given in a dose of 80 mg three times daily (n=6) for a median of 11 days (range: 5-21 days). Treatment was well tolerated, and the ten patients reported marked improvements of symptoms after starting famotidine. The combined symptom score markedly improved within 24 hours of starting

famotidine and peripheral oxygen saturation (n=2) and device recorded activity (n=1) also increased [26].

Freedberg et al (2020 reported a retrospective study which included 1620 covid-19 hospitalized patients with, 84 patients (5.1%) received famotidine within 24 hours of hospital admission. The use of famotidine was associated with a reduced risk of clinical deterioration leading to intubation or death [27].

Baron et al (2020) emphasized that teicoplanin was previously reported to be effective in inhibiting the first stage of MERS-coronarivus viral cycle in human cells, was also active against the SARS-Cov-2 [28].In addition, Wang et al (2016) teicoplanin can inhibit Ebola pseudovirus infection by blocking virus entry in the low micromolar range [29]. It is also able to block the MERS and SARS envelope pseudotyped viruses.

Teicoplanin is a semi-synthetic glycopeptide antibiotic used in the prophylaxis and treatment of serious infections caused by Gram-positive bacteria, including methicillin-resistant Staphylococcus aureus and Enterococcus faecalis. It acts by inhibiting bacterial cell wall synthesis, and its spectrum of activity similar to vancomycin. Oral teicoplanin has been shown to be effective in the treatment of pseudomembranous colitis and Clostridium difficile-associated diarrhea, with comparable efficacy with vancomycin [1-7].

Teicoplanin can be used in the doses suggested by Sato et al (2006) [30]. A loading dose of 400 or 800 mg can be given on the first day, followed by maintenance dose of 400mg. In areas where serial tests are available for asymptomatic patients, a dose of 400mg can be given for to days with aim of achieving early negative test and clearance of the virus, and thus reducing its spread.

There is some preliminary evidence relying on data on homogenous coronaviruses and other pathogens suggesting that reducing the excessive inflammation, oxidation, and an exaggerated immune response which may contribute to SARS-CoV-2 pathological changes including a cytokine storm and progression to acute lung injury/acute respiratory distress syndrome and even death, may contribute to improving the outcome.

In respiratory syncytial virus mice models, the use of melatonin was reported to cause down regulation of pro-inflammatory cytokine release, acute lung oxidative injury, and inflammatory cell activation. Melatonin, a safe, well-known anti-inflammatory and anti-oxidative molecule, is protective against severe respiratory symptoms caused by viruses and other pathogens. Melatonin was effective in critical care patients, probably acting by reducing vessel permeability, anxiety, sedation use, and improving sleeping quality. There is acceptable evidence suggesting that melatonin can limit virus-related diseases that enable its recommendation in the adjunctive supportive therapies [5, 6, 7].

A recent evidence-based recommendation which was published in 9 languages [5, 6, 31-38] emphasized that until now, there is no single drug can result in a virological cure.

The early use of safe well-known therapeutic agents having the potential to control the virus such as azithromycin, and teicoplanin can help in preventing milder cases from spreading the virus, and also may prevent the progression to serious pneumonia and significant respiratory distress. However, effective treatment for more severe cases can also be achieved by the early use of drug combinations that may include Azithromycin+ teicoplanin + famotidine, remdesivir + azithromycin, + teicoplanin. The addition of low dose chloroquine can also be considered in patients with healthy hearts [7].

Conlusion

It seems that, the most important factors that made treatment of Donald Trump effective and successful are:

1-The early institution of therapy regardless of the generally accepted recommendations.

2-The use of multiple drugs as none of the available drug alone can guarantee successful treatment.

Recommendation

Assuming that all patients in the world are as important as Mr. Trump and offering them the best evidenced-based therapies as early as possible.

We recommend the use of oral azithromycin 500 mg tablets daily as a preventive measure for high risk individuals.

We recommend the use of oral azithromycin 500 mg twice daily or oral azithromycin 500 mg tablets daily plus low dose oral hydroxychloroquine 200 mg once daily for asymptomatic patients who tested positive.

For patients with positive test who have mild symptoms, it will be useful to add melatonin 5 mg at night which will probably help with symptomatic control of cough and possibly help in the prevention of the cytokine storm.

For patients with difficulty in breathing who don't have the access to treatment with remdesivir and Regeneron's antibody mixture, we recommend early use of the following therapies at this stage:

1-Intravenous or intramuscular Teicoplanin in the doses suggested by Sato et al (2006) [4, 5, 6, 7]. A loading dose of 400 or 800 mg can be given on the first day, followed by maintenance dose of 400mg.

2-Oral azithromycin 500 mg twice daily.

3-Oral Famotidine.

4-Oral melatonin 5 mg daily at night.

5-Low dose of hydroxychloroquine 200mg can also be considered in patients with health hearts.

6-Dexamethasone can be given based on the clinical judgment.

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Conflict of interest: None

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