

View Point

REMEDSIVIR: A DRUG WITH PROMISING EFFECTS AGAINST COVID-19

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ABSTRACT

COVID-19, the illness caused by the new coronavirus, has affected thousands of people worldwide, and this pandemic has hampered our world and our daily life badly. Therapeutically useful and effective antiviral drug against Covid-19 is thus the need of the hour in the medical field globally. Till now, no specific antiviral drug has proven effective for curing patients with COVID-19. However, some antiviral drugs like darunavir, nelfinavir, and saquinavir, as well as other drugs like ACE inhibitor (angiotensin-converting enzyme inhibitor), daunorubicin, metamizole, bepotastine; and the antimalarial drug atovaquone have shown potential effects against this viral disease. And the race continues to find a drug that might benefit critically ill patients. Remdesivir, an adenosine analog with an extensive antiviral spectrum works by causing pre-mature viral termination, has shown promising results against coronaviruses (CoVs) both in vitro and in vivo using nonhuman primate animal models.

Key Words: Pandemic, Remdesivir, COVID-19

The rapidly growing pandemic of Coronavirus disease-2019 (COVID-19) originated in Wuhan, China. This virus was found in bats but got transmitted to humans by unknown means. To date, the confirmed number of COVID-19 cases is 10,533,779 globally, as reported by the WHO (World Health Organization). The situation in Pakistan is also alarming as the confirmed COVID-19 cases have surpassed 217,809 until today. Sindh is the most affected province with 86,795 cases followed by Punjab (77,740) cases in Pakistan.¹

The RNA enveloped virus ranges in size from 60 nm to 140 nm in diameter.² It stays alive on the worktop for a longer duration ranging from 24 hours to a couple of days in a favorable environment but is killed by disinfectants like sodium hypochlorite, hydrogen peroxide within minutes.³ Its transmission is either by inhalational route or touching contaminated surfaces and later touching one's own body parts like nose, mouth, and eyes.⁴ Its incubation period varies, ranging from 2 to 14 days. This

disease presents with fever, cough, breathlessness, and severe malaise among its victims. In the majority of cases, the disease is of mild nature or totally asymptomatic. Patients may later develop pneumonia, acute respiratory distress syndrome (ARDS), and multi-organ dysfunction as its complication.⁵ The mortality rate due to this pandemic has turned out to be 2 to 3%.⁶ Lower counts of white blood cells and raised levels of C-reactive protein (CRP) usually aid in diagnosing COVID-19 cases. Computerized tomographic chest scan depicts chest abnormalities if present even in asymptomatic or mildly diseased patients.⁷ Since Pakistan is a poverty-stricken country and affordability for patients in this setup matters the most. Despite minimum funds, the government has taken thorough steps like designed special hospitals, laboratories for testing, quarantine facilities, awareness campaign, guidelines for the public, including smart lockdown to control the proliferation of viruses. People were made aware of proper handwashing, avoidance of handshake, and the use of disinfectants.⁸ Till now, no specific drug has proved to be effective and satisfactory in curing COVID-19 positive symptomatic patients. Although

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several drugs are under pre-clinical and clinical trials that include favipiravir, ivermectin, lopinavir/ritonavir, chloroquine, and hydroxychloroquine.⁹ Unfortunately, none of the above came out as its true treatment option. This has created an opportunity for researchers to look for newer drugs.

There are only a few drugs that can truly lay claim to the title of 'Wonder drug,' and Remdesivir is amongst them as a strong contender because of its versatility, safety, and the health beneficiary effects. Remdesivir was initially developed for Hepatitis C treatment but did not show promising results. However, it is now under consideration for the treatment of Ebola virus infection. Its antiviral activity against RNA viruses (including SARS/MERS-CoV) infection in cultured cells, mice and nonhuman primate (NHP) models has been proven.¹⁰

Fortunately, the Drug Regulating Authority of Pakistan (DRAP) has announced that two pharmaceutical companies in Pakistan that are; Ferozsons and Searle will offer treatment against COVID-19 in the form of Remsidivir in injection form. It has been approved for emergency use in USA¹¹ and Japan though further investigations in vivo are required.

AUTHOR'S CONTRIBUTION:

MR: Conception, design of study and acquisition published data

MIP: Drafting Article

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