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### Therapies & Vaccines on the Horizon for COVID-19

Announcer:

You're listening to *The Drug Report* on ReachMD, hosted by Linda Bernstein, Pharm.D., Clinical Professor on the Volunteer Faculty of the School of Pharmacy, University of California, San Francisco.

Dr. Bernstein:

Welcome to *The Drug Report*. I'm Dr. Linda Bernstein.

Today on *The Drug Report* we will explore what therapies and vaccines are on the horizon for the treatment and prevention of COVID-19.

The CDC states that there are currently no antiviral drugs licensed by the U.S. Food and Drug Administration to treat patients with the virus. In the United States, the National Institutes of Health and collaborators are working on development of candidate vaccines and therapeutics for COVID-19. Some in-vitro or in-vivo studies suggest potential therapeutic activity of compounds against related coronaviruses, but there are no available data from randomized controlled trials in humans to support recommending any investigational therapeutics for patients with confirmed or suspected COVID-19 at this time.

According to a recent publication by Bioworld News Service, 62 global companies and organizations currently have biopharmaceutical products in development for COVID-19. The categories of these investigational products are diverse and include everything from stem cells to polyclonal hyperimmune globulin, interferon alfa, interleukin-6 antibody, inhaled nitric oxide, amniotic fluid concentrate, antivirals such as remdesivir, monoclonal antibodies, cytokine storm inhibitors and angiotensin II for septic shock, just to name a few. Single and combination therapies are being tested. Some companies are screening libraries of molecules with confirmed safety data for any potential candidates.

Clinicaltrials.gov lists almost 100 studies in process or recruiting subjects for the treatment and prevention of COVID-19. They are assessing carrimycin, human umbilical cord and dental pulp mesenchymal stem cells, bromhexine hydrochloride, a mucolytic in combination with standard treatment, corticosteroids, thalidomide, Xiyanping injection (a plant derived chinese product), T89, another Chinese medicine, interferon alfa2beta, and plasma among many other potential treatment modalities. Researchers are also planning to study the effectiveness of medical masks vs. N95 respirators, and a self-test and self-alert mobile application in detecting susceptible infection.

The CDC states that Remdesivir, an investigational antiviral drug that was reported to have in-vitro activity against SARS-CoV-2 is being given to some patients with COVID-19 intravenously for compassionate use outside of a clinical trial setting. In China, multiple clinical trials of investigational therapeutics have been implemented, including two clinical trials of remdesivir. An NIH-adaptive randomized controlled clinical trial of investigational therapeutics for hospitalized COVID-19 patients in the United States was approved by the Food and Drug Administration; the first investigational therapeutic to be studied is remdesivir. Other remdesivir trials for COVID-19 patients in the U.S. are available for participants with severe and moderate coronavirus disease. Some COVID-19 patients have received uncontrolled treatment with other investigational antivirals. For more information on specific clinical trials underway for treatment of patients with COVID-19, see clinicaltrials.gov and the Chinese Clinical Trials Register at [www.chictr.org](http://www.chictr.org).

Chinese researchers report this year in *Drug Discoveries & Therapeutics* on several drugs such as chloroquine, arbidol, remdesivir, and favipiravir that are currently undergoing clinical studies to test their efficacy and safety in the treatment of coronavirus disease 2019 (COVID-19) in China with some promising results. The efficacy and safety of these candidate drugs in the treatment of COVID-19 need to be confirmed in further preclinical and clinical trials.

On the vaccine front, Bioworld reports 45 companies or institutions working on the development of a COVID-19 vaccine.

In the absence of an approved vaccine, the CDC advises that community mitigation measures are the primary way to reduce SARS-CoV-2 transmission among persons in the community, and adherence to recommended infection prevention and control measures can reduce the risk of SARS-CoV-2 spread in healthcare facilities. In the absence of an approved therapeutic with demonstrated safety and efficacy in patients with COVID-19, clinical management of these patients includes avoidance of corticosteroids, and supportive care of complications, including advanced organ support.

For *The Drug Report*, I'm Pharmacist, Dr. Linda Bernstein .

Announcer:

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