7 medications to watch in global race to discover COVID-19 treatment

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Andis Robeznieks
Senior News Writer

No therapies have yet to conclusively show effectiveness against COVID-19, but researchers around the globe are working furiously to identity drugs that could prevent illness or provide treatment, as evidenced by a recent literature review that identified 1,315 scientific articles devoted to that topic.

The review, conducted by researchers at the University of Texas Southwestern (UTSW) Medical Center in Dallas and published in *JAMA*, includes reports on 351 related clinical trials with 291 specifically aimed at COVID-19.

The article identifies which potential treatments researchers are most focused on and highlights those that showed the most promise. The review includes a chart identifying different potential therapeutic agents, how they work, what amount constitutes an “adult dose” and how it would be administered, contraindications and toxicities, major drug-drug interactions, and special populations—such as pregnant women—who may be at risk.

The review highlights four repurposed agents, two investigational drugs and one adjunctive therapy:

- Chloroquine phosphate (Aralen/generic).
- Hydroxychloroquine sulfate (Plaquenil/generic).
- Lopinavir/Ritonavir (Kaletra).
- Umifenovir (Arbidol).
- Remdesivir.
- Favipiravir.
- Tocilizumab (Actemra).

The *JAMA* literature review also includes links to resources and guidelines on clinical management, clinical trials, drug-drug interactions, and guidance on special populations.

“The speed and volume of clinical trials launched to investigate potential therapies for COVID-19 highlight both the need and capability to produce high-quality evidence even in the middle of a pandemic,” wrote the researchers. The senior author is James B. Cutrell, MD, an associate professor of internal medicine with UTSW’s division of infectious diseases and geographic medicine.

More on the latest COVID-19 research from the JAMA Network™ can be found in the AMA's COVID-19 resource center, which also includes the latest resources offered by the Centers for Disease Control and Prevention and the World Health Organization. Also, please check out the JAMA Network COVID-19 resource center.

“Most promising therapy” identified

The review identifies remdesivir, an antiviral drug first used to treat Ebola, as “the most promising therapy,” but cautions that it has not yet been approved by the Food and Drug Administration (FDA).

Several trials are in progress, however, including a National Institutes of Health (NIH) sponsored randomized, double-blind, placebo-controlled trial that will shed light on the effectiveness of remdesivir compared with supportive care.

Also, the drug oseltamivir “has not been shown to have efficacy,” while corticosteroids “are currently not recommended,” the researchers noted. The effect of angiotensin-converting enzyme (ACE2) inhibitors or angiotensin receptor blockers on COVID-19 is unclear, but patients with COVID-19 who are already taking these medications should continue to do so.

“Conflicting in vitro data exist to determine if these agents have a detrimental or protective effect in patients with COVID19,” the researchers wrote. “Pending further research, clinical societies and practice guidelines are recommending continuing therapy for patients already taking one of these agents.”

The authors cited chloroquine and hydroxychloroquine “long-standing history” for the prevention and treatment of malaria and the treatment of chronic inflammatory diseases. But they noted that a Chinese study showing chloroquine’s success in treating COVID-19 has not been presented for validation or published for peer review and a French study showing hydroxychloroquine’s promise “had several major limitations.”

They added, however, that NIH studies are in the works to examine the effectiveness of chloroquine prophylaxis in health care workers and hydroxychloroquine prophylaxis for persons who had high-risk exposures to COVID-19.

The review also summarizes the existing evidence on the effectiveness of using “convalescent plasma” or “hyperimmune immunoglobulins” from patients who have recovered from COVID-19.

Adverse-event reporting encouraged

Physicians and other health professionals who observe or suspect an adverse drug event from any medication used to prevent or treat COVID-19 are encouraged to alert MedWatch, the FDA’s medical product-safety reporting program.

While much of the available evidence on treatments is preliminary, the authors were able to make at least one conclusive declaration.

“The most effective long-term strategy for prevention of future outbreaks of this virus would be the development of a vaccine providing protective immunity,” they wrote. “However, a minimum of 12 to 18 months would be required before widespread vaccine deployment.”