

## **PRINT-COVID-19 treatment improves, but prevention through vaccination is key to recovery**

COVID-19 has become the most deadly pandemic in American history, with deaths at more than 650,000, surpassing the estimated deaths from the 1918 Spanish flu. But a lead infectious disease doctor for Peoria, Illinois-based OSF HealthCare says over the course of the pandemic, medical providers have found ways to save lives with improved, more standardized care.

Doug Kasper, M.D., a leader in the OSF HealthCare response to COVID-19, says unlike the early days in the pandemic, all providers now know the best protocols for treatment and how to make sure those infected are getting the proper care.

He says medical providers have progressed to a systematic understanding of the best way to treat COVID-19 that includes intervening earlier, before the virus can continue to replicate within the body.

“We’re better at lab-based monitoring to assess ongoing infection and damage, and we’re better at recognizing those individuals that require hospitalizations for specialized care. That has come a tremendously long way since earlier on in the pandemic, where it was more of a case-by-case basis. We’ve now progressed to having a systemic understanding of COVID-19 treatment.”

One improvement has been the early use of monoclonal antibodies for people who are at high risk of serious complications. The drugs are designed to mimic the body’s natural immune response by targeting certain coronavirus proteins and preventing them from entering cells. OSF switched from using a single monoclonal antibody to a more effective cocktail, based on evolving research. Dr. Kasper says the infusions are a preventive measure.

“We give it outside of the hospital to prevent admission to the hospital. It can be used in individuals who are vaccinated or unvaccinated. It is being used across the country widely at this time.”

Convalescent plasma from recovered COVID-19 patients was used early on but Dr. Kasper says it is no longer a preferred therapy, based on research from a large clinical trial in which OSF HealthCare participated.

“Clinical trial data did not support its effective use and the emergence of monoclonal antibody and vaccination replaced it as much more successful strategies for COVID-19 infection.”

Other COVID-19 therapies include the steroid Dexamethasone and anti-inflammatory drug Baricitinib, along with oxygen therapy and anticoagulants such as Lovenox to prevent blood clots.

Remdesivir is the only approved anti-viral drug to treat COVID-19. Dr. Kasper says it’s been used narrowly, early in the infection, for a specific group of hospitalized patients. Research about the drug and its potential uses will continue to be reviewed. For example, [newly released results of an international study](#) of 536 patients suggests Remdesivir cut high-risk COVID-19 hospitalizations by 87% when given over three days to patients within a week of experiencing symptoms.

### **Prone proves a powerful intervention**

OSF HealthCare found increasing evidence supporting the effectiveness of prone – putting individuals with COVID-19 on their stomachs as a way to increase the amount of oxygen to the lungs. The approach has been used previously on patients with other lung and heart conditions and now it is being used, in many cases, to keep patients off of a ventilator.

“The idea is that prone is not harmful to the individual in any way and is potentially helpful for oxygenation reasons,” says Dr. Kasper.

Similarly, COVID-19 patients in the hospital are usually given a cocktail of vitamins which includes thiamine, vitamin C, vitamin D, zinc and melatonin. Dr. Kasper says there are no long-term studies to support the approach, but vitamin supplements are given in doses that won’t be harmful and could help patients whose nutrient deficiencies can increase their susceptibility to infection.

Dr. Kasper says the delta variant has made it more difficult to predict outcomes for patients who are admitted to the hospital. That’s particularly true for unvaccinated individuals because there are two phases of infection. During the first phase, usually a week to 10 days, the virus is replicating before the immune system has a chance to respond. The second

phase, Dr. Kasper explains, involves the immune system response. Sometimes the response is so extreme, it increases disease severity and risk of death, so tempering the body's inflammatory response is an important component of COVID-19 management.

The individual's own immune response, while trying to clear the infection, can lead to tissue damage.

This is where we start to see people that have trouble with respiratory symptoms. The ongoing cycle of infection and inflammation in the lungs leads to viral pneumonia, which in some individuals can be quite severe, leading to respiratory failure."

Dr. Kasper says it appears antibody response can have an impact on other body functions that can lead to some of the long COVID symptoms such as fatigue, mental fog or reduced endurance. He says there are longer-range studies underway that will follow patients four to five years. OSF HealthCare plans to collaborate with others to put together a patient registry while consulting with specialists to handle the most serious issues facing people with long COVID.

The pandemic has also led to the expansion of support for nursing facilities and group homes, and expanding at-home monitoring and care.

"There are whole new types of care, a lot of which has been developed around telemedicine, e-Medicine, that are trying to provide outreach to all impacts of the pandemic, not only in Peoria, not only in our bigger cities, but into our rural patient populations as well."

No matter how far treatment has come since the start of the pandemic, Dr. Kasper says the best approach moving forward is the prevention that comes with being fully vaccinated against the virus.