Briefing for October 29-November 11, 2020

This briefing provides an at-a-glance view of some important developments in the information universe surrounding COVID-19. The views presented here are solely those of ECRI Horizon Scanning and have not been vetted by other stakeholders.

The first Emergency Use Authorization submission for a COVID-19 vaccine is expected by the third week of November 2020. This follows Pfizer and BioNTech’s announcement that their BNT162b2 vaccine is 90% effective in trial participants. This pace is much faster than the typical vaccine development time of 8 years, usually supported by 7 clinical trials and 6 months’ follow-up to catch adverse events. ECRI has called on the Food and Drug Administration (FDA) to insist on no fewer than 6 months of follow-up data from the full trial cohort.

Still, this is welcome news. A record number of COVID-19 hospitalizations has been reported in the United States and nursing home cases have risen fourfold in 20 states. Nursing home staff and frontline workers will likely be the first to receive vaccination. Treatment and risk assessment options (see Topics to Watch) are needed.

For our early coverage of the BNT162 vaccine, see PCORI COVID-19 Scan, July 9-July 22, 2020.

Topics to Watch

ECRI Horizon Scanning has selected the topics below as those with potential for impact relative to COVID-19 in the United States within the next 12 months. All views presented are preliminary and based on readily available information at the time of writing. Because these topics are rapidly developing, we cannot guarantee the accuracy of this information after the date listed on this publication. In addition, all views expressed in the commentary section are solely those of ECRI Horizon Scanning and have not been vetted by other stakeholders. Topics are listed in alphabetical order.

CD24Fc (SACCOVID) for Treating Severe COVID-19

Category: Treatments

Areas of potential impact: Patient outcomes, health care costs

Description: CD24Fc (OncoImmune, Rockville, Maryland) is a genetically recombined protein being developed as an intravenous treatment for severe COVID-19. Multiple inflammatory cytokines are elevated in patients with severe COVID-19 symptoms, which can lead to sepsis-like symptoms and multiple organ failure in severe cases. CD24Fc purportedly lessens severe coronavirus immune responses by binding and activating Siglec 10, a cell-surface receptor that dampens host inflammatory responses. The treatment also binds and blocks the activity of danger-associated molecular pathways, which initiate and perpetuate inflammatory cytokine responses.

AT A GLANCE

- CD24Fc (SACCOVID) is an investigational genetically recombined protein for treating severe COVID-19 that purportedly dampens patients’ overactive coronavirus immune responses.
- Preliminary data from a phase 3 randomized trial of 203 people hospitalized with COVID-19 suggest that adding CD24Fc to standard care improved the likelihood of clinical recovery by 60% and decreased median time to recovery to 6 days compared with 10 days in the placebo group.
- The phase 3 randomized, placebo-controlled trial is ongoing, plans to enroll 241 hospitalized patients with severe or critical COVID-19, and has an estimated study completion date of December 2020.
A phase 3 randomized controlled trial (SAC-COVID), comparing CD24Fc with placebo for treating severe COVID-19 in 241 patients with severe and critical COVID-19, is ongoing. Top-line interim data from this phase 3 trial, in 203 COVID-19 patients receiving standard care and who required oxygen support—including supplemental oxygen, high-flow oxygen, and noninvasive ventilation—suggested that treatment with CD24Fc improved the likelihood of clinical recovery by 60% compared with placebo. CD24Fc also appeared to decrease the median time to recovery to 6 days, compared with 10 days in patients given placebo, and reduced risk of death and respiratory failure by more than 50% compared with placebo.

Commentary: CD24Fc might improve patient health outcomes by mitigating severe COVID-19 disease progression and risk of death, as well as decreasing the need and duration of mechanical ventilation.

Early feedback from ECRI internal stakeholders suggests that CD24Fc might be useful for treating severely ill COVID-19 patients, if found safe and effective. It might be combined with other therapeutics to customize treatment regimens for specific patient cases and needs. Stakeholders thought that the interim results were encouraging and that if confirmed, CD24Fc might gain accelerated approval and substantially impact the health care system by reducing the overall disease burden, as well as demands on infrastructure, supplies, and staffing, particularly in the wake of rising infection rates.

Sepsis Diagnostic Tests to Assess Risk of Severe COVID-19

Categories: Screening and diagnostics

Areas of potential impact: Patient outcomes, population health, health care delivery and process, health care disparities, health care costs

Description: Sepsis is characterized by an overactive immune response to infection that can cause life-threatening organ damage. Severe COVID-19 can involve viral-induced sepsis. Multiple companies (eg, Beckman Coulter, Inc, Brooklyn, New York; Cytovale, Inc, San Francisco, California; and Immunexpress, Inc, Seattle, Washington) are developing diagnostic tests intended to detect early signs of viral-induced sepsis. Immunexpress' assay measures the nucleic acid levels of genes associated with pathogen-specific immune responses. The tests from Beckman Coulter and Cytovale measure changes in the morphology of white blood cells as part of a routine complete blood count.

Currently, acute respiratory distress is the earliest and the most common sign of severe COVID-19 in critical patients; however, early markers of sepsis might precede these symptoms. Sepsis diagnostic test results, combined with other laboratory findings and clinical information, might help clinicians identify patients with a higher likelihood of severe disease. This could allow earlier management to moderate immune responses and prevent sepsis-related symptoms and complications.

AT A GLANCE

- Sepsis is a life-threatening organ dysfunction caused by an overactive immune response to infection.
- Multiple companies are developing sepsis diagnostic tests intended to detect early signs of viral-induced sepsis by measuring the levels of genes associated with coronavirus-specific immune responses or changes in the structure of white blood cells as part of a complete blood count.
- Acute respiratory distress is the earliest and the most common sign of severe coronavirus disease in critically ill patients. Combined with other laboratory and clinical findings, sepsis tests might help clinicians identify patients who are more likely to develop severe disease, allowing earlier intervention and improving outcomes.
- One manufacturer's sepsis test is cleared by the FDA for use, but its utility in COVID-19 management remains unclear.

Cytovale has initiated a clinical trial enrolling 300 participants presenting in an emergency department with signs or suspicion of COVID-19 or respiratory infections. Primary completion was expected in May 2020. The FDA granted 510(k) clearance to Beckman Coulter’s Early Sepsis Indicator for detecting sepsis, but its utility in COVID-19 management remains unclear.
**Commentary:** Sepsis can progress quickly and be difficult to treat. Early intervention can improve clinical outcomes. However, sepsis is difficult to detect, and most patients are unaware of its signs and symptoms.

Early feedback from ECRI internal stakeholders found that sepsis diagnostic tests might help identify patients at risk of developing severe COVID-19 before acute respiratory distress symptoms appear. Reliably identifying early sepsis cases might improve COVID-19-related outcomes by promoting appropriate management before severe symptoms arise.

**About Horizon Scanning**

Horizon scanning is a systematic process that serves as an early warning system to inform decision makers about possible future opportunities and threats. Health care horizon scanning identifies technologies, innovations, and trends with potential to cause future shifts or disruptions—positive or negative—in areas such as access to care, care delivery processes, care setting, costs of care, current treatment models or paradigms, health disparities, health care infrastructure, public health, and patient health outcomes.

The PCORI Health Care Horizon Scanning System (HCHSS) conducts horizon scanning to better inform research investments at the Patient-Centered Outcomes Research Institute (PCORI). Initially, PCORI defined the HCHSS project scope to focus on interventions with high potential for disruption in the United States in 5 priority areas: Alzheimer's disease and other dementias, cancer, cardiovascular diseases, mental and behavioral health conditions, and rare diseases. In addition, the system captures high-level disruptive trends across all clinical areas, which may lead PCORI to expand the project scope to include other priority areas in the future.

In early 2020, the COVID-19 pandemic created a fast-moving, widespread public health crisis. In May 2020, PCORI expanded its HCHSS to elucidate the landscape of potentially impactful applications for COVID-19.

Stakeholders noted concerns that guidance is limited for prioritizing the patients who should be tested for sepsis. And they thought that high expectations for clinicians to catch every case might encourage broad use of sepsis tests, which could increase health care costs. Also, if sepsis tests do not improve early detection of severe COVID-19 above clinical features alone, use of sepsis tests might lead to inappropriate treatment. Lastly, early-stage sepsis detection might not translate into improved outcomes without effective treatment options.

The HCHSS COVID-19 supplement scans for, identifies, monitors, and reports on emerging and available COVID-19–related treatments, diagnostics, preventive measures, management strategies, and systems changes with potential for high impact to patient outcomes—for individuals and populations—in the United States in the next 12 months.

The HCHSS COVID-19 supplement produces 3 main outputs:

- **Biweekly COVID-19 Scans** (eg, this document) provide ECRI Horizon Scanning with a vehicle to inform PCORI and the public in a timely manner of important topics of interest identified during ongoing scanning and topic identification or through the ECRI stakeholder survey process.

- **Status Reports** (quarterly) briefly list and describe all COVID-19–related topics identified, monitored, and recently archived.

- **High Impact Reports** (every 4 months) highlight those topics that ECRI internal stakeholders (eg, physicians, nurses, allied health professionals, public health professionals, first responders, health systems experts, clinical engineers, researchers, business and finance professionals, and information technology professionals) have identified as having potential for high impact relative to COVID-19 in the United States.

We welcome comments on this document. Send comments by email to horizonscan@pcori.org.

Commentary in this COVID-19 Scan reflects preliminary views of ECRI Horizon Scanning and internal ECRI stakeholders. The information contained in this document has not been vetted by other stakeholders.
About This Report

The PCORI Health Care Horizon Scanning System is operated by ECRI under contract to PCORI, Washington, DC (Contract No. MSA-HORIZSCAN-ECRI-ENG-2018.7.12). The findings and conclusions in this document are those of the authors, who are responsible for its content. No statement in this report should be construed as an official position of PCORI.

A representative from PCORI served as a contracting officer’s technical representative and provided input during the implementation of the horizon scanning system. PCORI does not directly participate in horizon scanning or assessing leads or topics and did not provide opinions regarding potential impact of interventions.

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None of the individuals compiling this information has any affiliations or financial involvement that conflict with the material presented in this report.

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