

IUIS Webinar: What cancer immunologists are doing about COVID-19 ?

Immuno-oncologists Continue to Leverage Their Resources for the Near and Long-Term

COVID-19 treatments and who does it?
 (patients with pneumonitis (Cancer vs. COVID) are under detailed review)

- Germline polymorphisms
- Magnitude of the T-cell and Antibody responses in real time

The natural history of the disease in a broad catchment area:
 >1000 patients - symptomatic or not

- Routine screening of up to 1000 patients - symptomatic or not
- Serological analysis of cytokine metabolites over time in everyone

COVID-19 biobank:

- 1000 measurement of inflammatory cytokines to identify biomarkers of CRS
- 500 hospitalized patients followed longitudinally (Blood, sera, Bronchoalveolar lavage)
- High dimensional profiling to understand drivers of immunopathology
- Longitudinal follow up of recovered patients
- To correlate quality of the adaptive response in patients with disease severity

Tom Gajewski, MD PhD
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Immuno-oncologists Continue to Leverage Their Resources for the Near and Long-Term

- **Who benefits from COVID-19 treatments and who doesn't?**
 - Bio-banked serum from patients with pneumonitis (Cancer vs. COVID)
 - Resident airway microbes under detailed review
 - Germline polymorphisms
 - Magnitude of the T-cell and Antibody responses in real time
- **The natural history of the disease in a broad catchment area:**
 - Routine screening of up to 1000 patients - symptomatic or not
 - Serological analysis of cytokine metabolites over time in everyone
- **COVID-19 biobank:**
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Did you watch the IUIS Webinar : “What cancer immunologists are doing about COVID-19?” by Rachel Humphrey, a medical oncologist, who is currently serving as Head of Research and Development for [TIO Bioventures](https://www.bioventures.com/).

Additional Explorations

- **Exploring convalescent serum from patients who have recovered**
 - To characterize the immune conditions after recovery
- **Disseminating informatics technologies for immune profiling**
- **Developing a therapy based on blocking the virus from entering the host**
 - Soluble ACE2 receptors
 - Ferret animal models



John Timmerman, MD



Lisa Butterfield, PhD



Dirk Spitzer, PhD

Source: Slides from IUIS Webinar by

Rachel Humphery

Highlights from her talk include:

- Intersection in advances in cancer and infectious diseases immunology, could guide development of therapies against COVID-19
- Recently published review by [Vardhana & Wolchok](#) that *“explores the contributions of the innate and adaptive immune systems to both viral control as well as toxicity during COVID-19 infections and offer suggestions to both understand and therapeutically modulate anti-COVID immunity”*.
- Data that described successful of anti-PD-1 treatment (Pembrolizumab) against cancers including those in lung tissue, which could be used to treat COVID-19 symptoms. It should be noted that this treatment against cancer is not 100% successful, and more research is required to improve the success rate.
- One of the side effects associated with CAR-T cell therapy include cytokine release syndrome, which can be treated using IL-6 inhibitor (Tocilizumab). This symptomatic treatment of CRS was used treat COVID-19 in China, and is now approved for COVID-19 pneumonia in China. She did note differences in outcomes from anti-IL-6 treatment*

*Note: [Exploratory and pre-specified analysis of “severe” and “critical” COVID-19 patients of a Phase 2/3 trial evaluating Kevzara® \(sarilumab\), an interleukin-6 \(IL-6\) receptor antibody, had no notable benefit \(of Kevzara\) on clinical outcomes when combining the “severe” and “critical” groups, versus placebo. However, there were negative trends for most outcomes in the “severe” group.](#) .