COVID-19 IMMUNITY TASK FORCE

Research Roundup

Your weekly review on COVID-related research

Spotlight on CITF-funded Research

New study to monitor COVID-19 illness and vaccine safety, effectiveness in children and youth in Canada

The COVID-19 Immunity Task Force (CITF) and Vaccine Surveillance Reference Group (VSRG) are supporting a new pan-Canadian study that will monitor the effects of illness from COVID-19, as well as the safety and effectiveness of COVID-19 vaccines in children and youth. The study will be conducted through Canada's IMPACT (Immunization Monitoring Program ACTive) network, which has been continuously monitoring multiple pediatric vaccines for more than 30 years.

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Publications from our Experts

Low antibody levels after one dose of the Pfizer-BioNTech vaccine in hemodialysis patients

The risk of death from COVID-19 for patients receiving hemodialysis is 25% - much higher than in the general population. One of the reasons for this is that hemodialysis patients have compromised immune systems. Patients receiving hemodialysis were not included in the Pfizer-BioNTech clinical trials, so it is unclear if these patients develop strong immune responses following vaccination. In a recent article published in *Canadian Medical Association Journal (CMAJ)*, CITF-funded researcher Dr. Andrés Finzi from Université de Montréal, lead author Dr. Rita Suri from McGill University, and a larger research team, report that antibody responses after the first dose of Pfizer vaccine in hemodialysis patients are reduced compared to healthy controls. They will be following these subjects to see if immune responses improve after the second dose.

Read Summary

"Continuing with the status quo is not an option": Proceedings from an international virtual townhall discussion on long-term care in the time of COVID-19

The COVID-19 pandemic has been particularly devastating for long-term care (LTC) residents and their communities. In response to this, researchers, clinicians, and policy experts from around the world, including CITF-supported researchers Drs. Andrew Costa, George Heckman, and John Hirdes, came together in a virtual conference to address critical issues in LTC related to COVID-19 and to develop practical policy recommendations. This article, published in *The Journal of the American Medical Directors Association (JAMDA)*, summarizes the themes of the meeting and provides recommendations for supporting seniors in a safe and supportive manner.

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A single dose of the Pfizer-BioNTech COVID-19 vaccine results in a robust response, especially in previously-infected individuals

Scientists from Université de Montréal, including Dr. Cecile Tremblay and CITF-funded researchers Drs. Daniel Kaufmann and Andrés Finzi, conducted a comprehensive study of the immune response against SARS-CoV-2, three weeks after a single dose of the Pfizer-BioNTech COVID-19 vaccine. They reported a robust response, especially in individuals with a history of COVID-19. Their study, published in *Cell Host and Microbe*, supports the rationale for spacing doses in order to initially partially vaccinate a higher number of individuals in the context of vaccine scarcity.

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It's not over 'til it's over: Prevalence of long-term symptoms in individuals diagnosed with COVID-19

Researchers, including CITF-supported researcher Dr. Angela Cheung, conducted a systematic review to document the prevalence of post-COVID-19 symptoms in people in the short term (4-12 weeks after being diagnosed with COVID-19), as well as in the long term (after more than 12 weeks post-diagnosis). In this pre-print, therefore not yet peer-reviewed, the researchers suggest that most confirmed COVID-19 patients continued to experience one or more symptoms in the short-term (83%) and long-term (56%) after initial diagnosis. This has important implications for health systems globally as well as national and international public health organizations in resource allocation to support those experiencing post-COVID-19 symptoms.

Read Summary

International Research Review

Protecting children from COVID-19

In a short communication from *The JAMA Patient Page*, parents are provided with useful information about COVID-19 vaccines for children. The Pfizer-BioNTech vaccine has been shown to be safe and effective in children aged 12 years and up, while other vaccines are currently in trials for younger age groups or waiting for approval from regulatory bodies. Vaccinating children can prevent severe forms of the disease, especially for those with underlying medical conditions. Because vaccines are not yet available for children under 12, it is important to continue practicing public health measures (e.g., social distancing) to reduce the probability of transmission to and from children. It is also important to vaccinate the adults around children to build community-level immunity, thereby protecting the unvaccinated children.

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Immunity in people who had COVID-19 appears to be long-lasting

Long-term data have emerged regarding the durability of antibody responses in people who had COVID-19. In a recent pre-print, a team lead by Rockefeller University researcher Dr. Michel Nussenzweig reported immunity results from 63 people recovering from severe COVID-19 (convalescent individuals) up to 12 months post-infection. The authors suggest that immunity in convalescent individuals appears to be long-lasting and those who receive COVID-19 mRNA vaccines will mount an immune response that is protective against most circulating SARS-CoV-2 variants of concern.

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COVID-19 vaccines: six months and 2 billion doses later

On December 8th 2020 at 6:30 AM, the first COVID-19 vaccine was administered to a 90-year-old British woman in the United Kingdom. Six months later, over 2 billion doses have been administered worldwide. In this context, scientific journal *Nature* explores key vaccine questions as countries race to vaccinate their citizens as viral variants spread around the globe.

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A new therapy for COVID-19 on the horizon - an engineered IgM antibody nasal spray

Due to the ongoing pace of the COVID-19 pandemic, alongside the available vaccines, there is increased interest in complementary therapeutics. Several anti-SARS-CoV-2 antibody-based therapies have been approved for emergency-use, but viral resistance represents a major challenge in light of emerging variants. According to a recent study published in *Nature*, a new engineered IgM antibody that can be administered as a spray through the nose was more effective than previous IgG-based therapeutics at neutralizing the SARS-CoV-2 virus in animal models across a broad range of emerging variants, including Alpha (originally detected in the U.K.), Beta (originally detected in South Africa), and Gamma (originally detected in Brazil) variants of concern.

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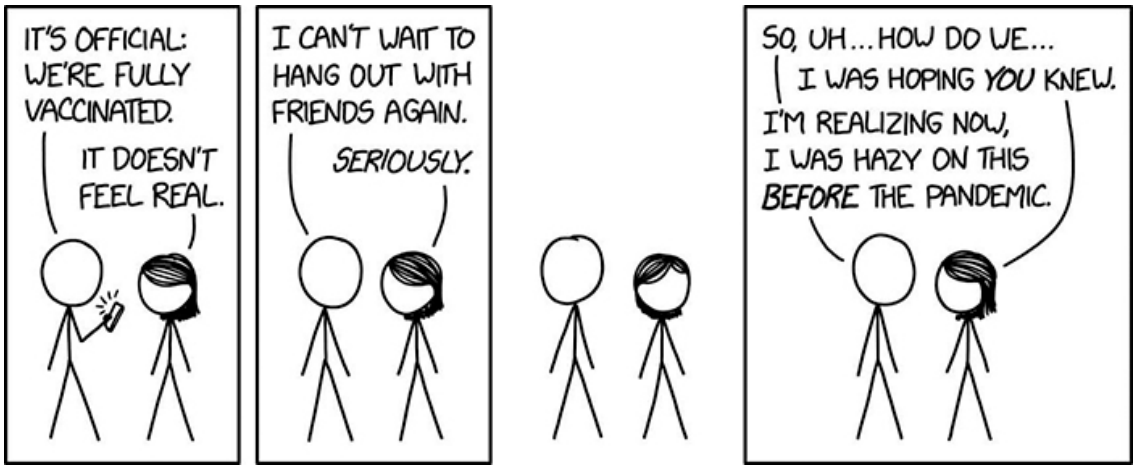
Beating the pandemic blues



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