Primary Care Networks
CALGARY AND AREA

Alberta Health Services

COVID-19

RESEARCH UPDATE

Dr. Michael Parkins
May 4, 2020

RESEARCH UPDATE

DR. MICHAEL PARKINS

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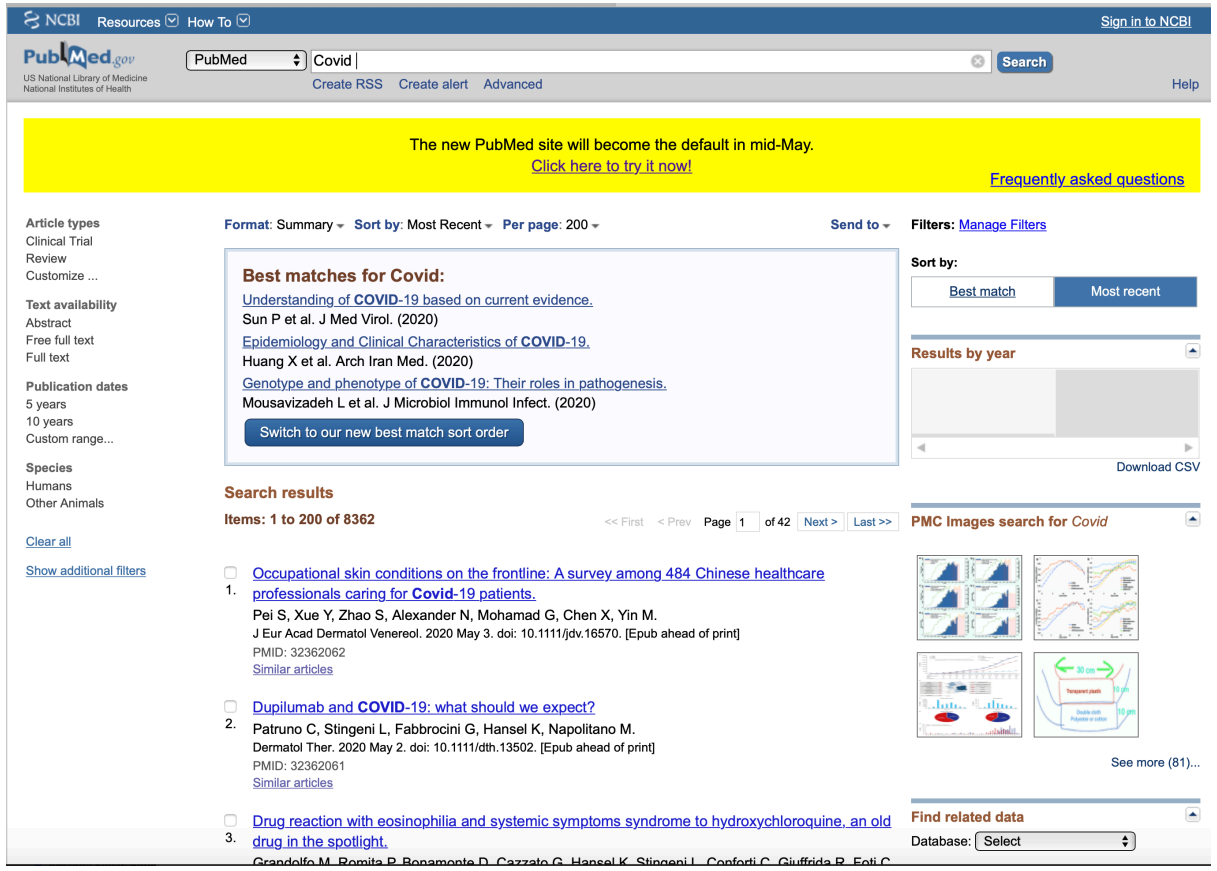
Keeping up with COVID-19 related science



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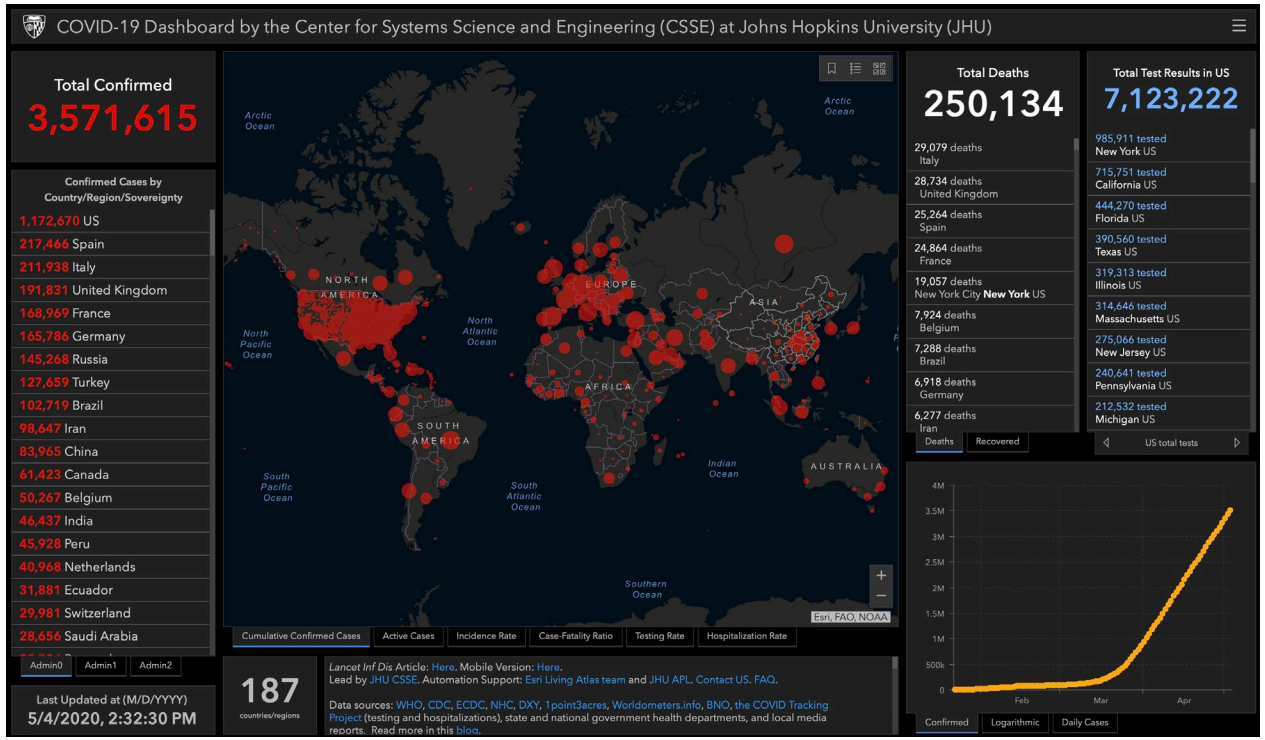
Excellent surveillance data



- Global case fatality rate
  - 7%
- Canadian case fatality rate
  - 6.4% (vs US 5.8%)
- Local case fatality rate
  - AB 1.65%

Nucleic acid shedding ≠ virus shedding

- Primary means of diagnosis remains direct detection of viral RNA
- ~1 billion virions/swab
- Virus no longer recoverable after 8 days
- Seroconversion between 7-14 days.

Virological assessment of hospitalized patients with COVID-2019

Roman Wölfel, Victor M. Corman, Wolfgang Guggemos, Michael Seilmaier, Sabine Zange, Marcel A. Müller, Daniela Niemeyer, Terry C. Jones, Patrick Vollmar, Camilla Rothe, Michael Hoelscher, Tobias Bleicker, Sebastian Brünink, Julia Schneider, Rosina Ehmann, Katrin Zwirglmaier, Christian Drosten ✉ & Clemens Wendtner ✉

Nature, April 1 2020

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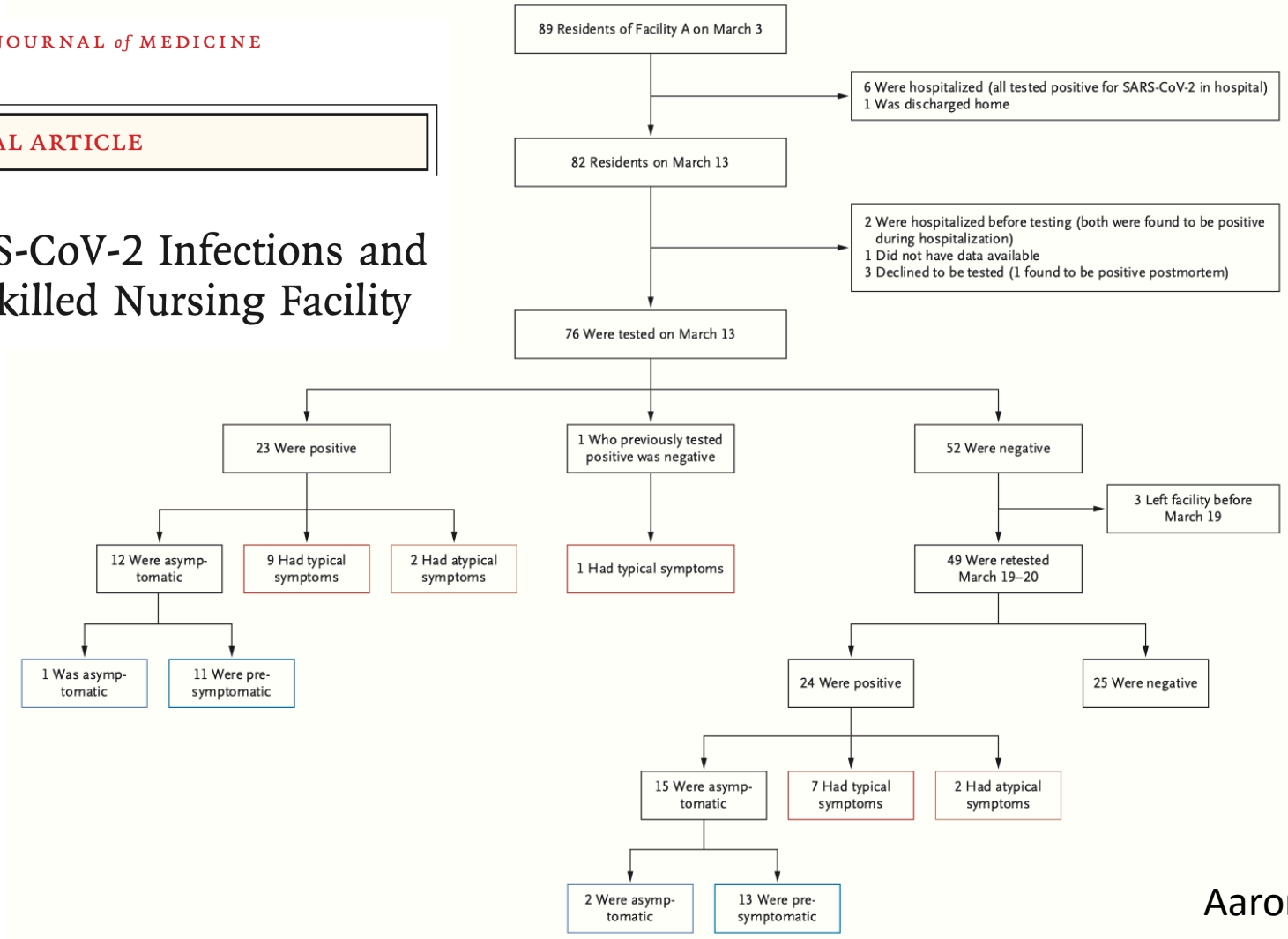
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Presymptomatic SARS-CoV-2 Infections and Transmission in a Skilled Nursing Facility



Aarons, NEJM 2020

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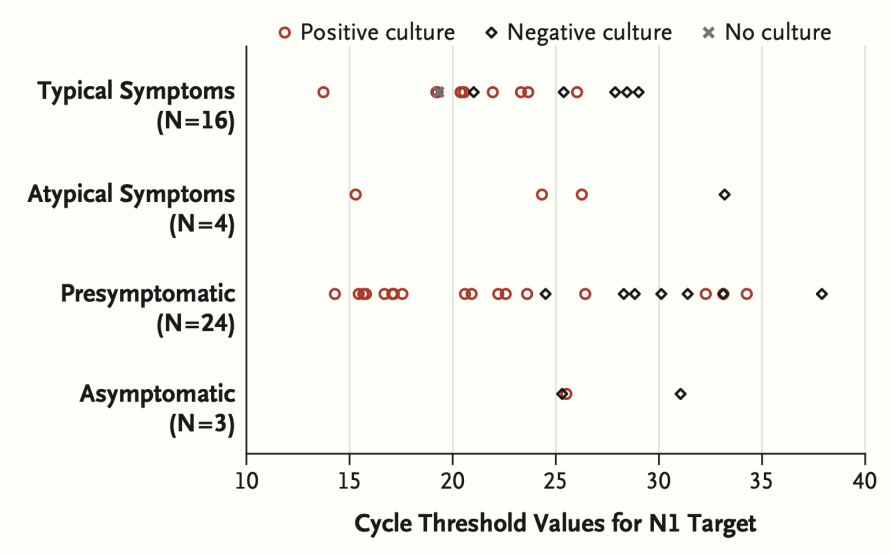

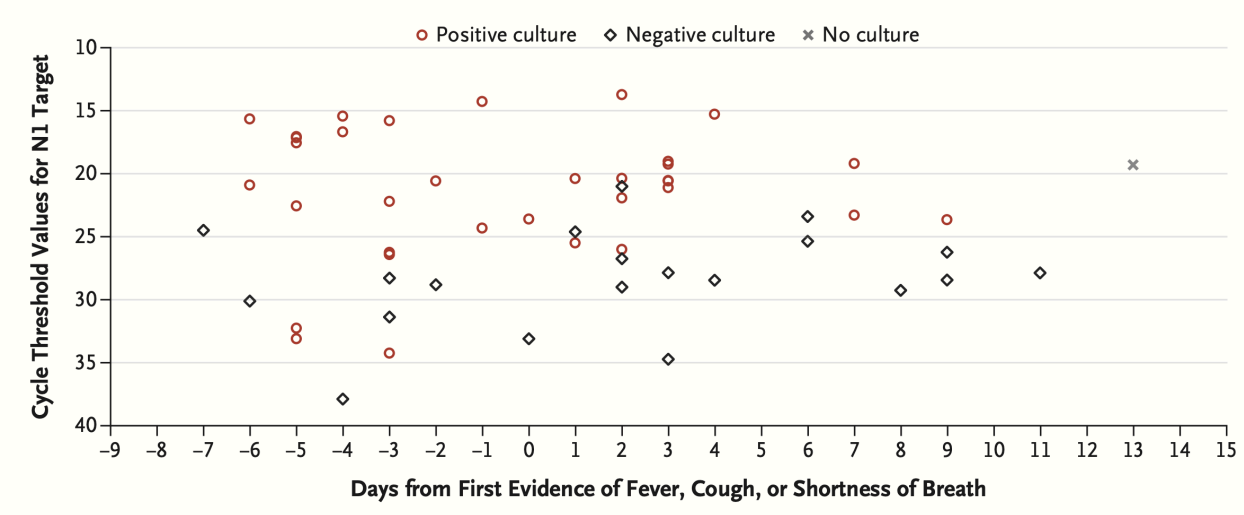

Aarons, NEJM 2020

Nosocomial transmission risks

ACCEPTED MANUSCRIPT

First reported nosocomial outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in a pediatric dialysis unit FREE

Vera Schwierzeck, Jens Christian König, Joachim Kühn, Alexander Mellmann, Carlos Luis Correa-Martínez, Heymut Omran, Martin Konrad, Thomas Kaiser, Stefanie Kampmeier ✉ Author Notes

Clinical Infectious Diseases, ciaa491, https://doi.org/10.1093/cid/ciaa491
Published: 27 April 2020 **Article history** ▾

- Index patient in a dialysis unit with 11 subsequent infected individuals
- HCW transmissions only occurred if;
  - <2 M and >15 minutes of face-face exposure without PPE

RESEARCH UPDATE

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The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Renin–Angiotensin–Aldosterone System Inhibitors and Risk of Covid-19

Table 2. Likelihood of Positive Test for Covid-19, According to Treatment with Various Antihypertensive Agents, among Propensity-Score–Matched Patients, with Hypertension and Overall.*

Medication	Matched Patients with Hypertension			All Matched Patients		
	Covid-19 in Patients Treated with Medication	Covid-19 in Patients Not Treated with Medication	Median Difference (95% CI)	Covid-19 in Patients Treated with Medication	Covid-19 in Patients Not Treated with Medication	Median Difference (95% CI)
	no./total no. (%)		*percentage points*	*no./total no. (%)*		*percentage points*
ACE inhibitor	584/954 (61.2)	583/954 (61.1)	0.1 (–4.3 to 4.5)	627/1044 (60.1)	653/1044 (62.5)	–2.5 (–6.7 to 1.6)
ARB	629/1057 (59.5)	612/1057 (57.9)	1.6 (–2.6 to 5.8)	664/1137 (58.4)	639/1137 (56.2)	2.2 (–1.9 to 6.3)
ACE inhibitor or ARB	1019/1692 (60.2)	986/1692 (58.3)	2.0 (–1.4 to 5.3)	1110/1909 (58.1)	1101/1909 (57.7)	–0.5 (–2.6 to 3.6)
Beta-blocker	792/1381 (57.3)	829/1381 (60.0)	–2.7 (–6.3 to 1.0)	912/1686 (54.1)	976/1686 (57.9)	–3.8 (–7.1 to –0.4)
Calcium-channel blocker	950/1577 (60.2)	930/1577 (59.0)	1.3 (–2.2 to 4.7)	992/1672 (59.3)	976/1672 (58.4)	0.9 (–2.3 to 4.3)
Thiazide diuretic	515/903 (57.0)	520/903 (57.6)	–0.6 (–5.1 to 3.9)	549/986 (55.7)	590/986 (59.8)	–4.2 (–8.5 to 0.2)

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The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Renin–Angiotensin–Aldosterone System Inhibitors and Risk of Covid-19

Table 3. Likelihood of Severe Covid-19, According to Treatment with Various Antihypertensive Agents, in Propensity-Score–Matched Patients with a Positive Test for Covid-19, with Hypertension and Overall.*

Medication	Matched Patients with Hypertension			All Matched Patients		
	Severe Covid-19 in Patients Treated with Medication	Severe Covid-19 in Patients Not Treated with Medication	Median Difference (95% CI)	Severe Covid-19 in Patients Treated with Medication	Severe Covid-19 in Patients Not Treated with Medication	Median Difference (95% CI)
	no./total no. (%)		*percentage points*	*no./total no. (%)*		*percentage points*
ACE inhibitor	139/584 (23.8)	158/583 (27.1)	−3.3 (−8.2 to 1.7)	150/627 (23.9)	169/653 (25.9)	1.9 (−6.6 to 2.8)
ARB	161/629 (25.6)	156/612 (25.5)	−0.1 (−4.8 to 4.9)	162/664 (24.4)	165/639 (25.8)	−1.4 (−6.1 to 3.3)
ACE inhibitor or ARB	252/1019 (24.7)	249/986 (25.3)	−0.5 (−4.3 to 3.2)	275/1110 (24.8)	274/1101 (24.9)	−0.1 (−3.7 to 3.5)
Beta-blocker	210/792 (26.5)	231/829 (27.9)	−1.4 (−5.7 to 3.0)	230/912 (25.2)	250/976 (25.6)	−0.4 (−4.3 to 3.6)
Calcium-channel blocker	253/950 (26.6)	207/930 (22.3)	4.4 (0.5 to 8.2)	263/992 (26.5)	235/976 (24.1)	2.4 (−1.4 to 6.2)
Thiazide diuretic	116/515 (22.5)	114/520 (21.9)	0.6 (−4.5 to 5.7)	120/549 (21.9)	149/590 (25.3)	−3.4 (−8.3 to 1.6)

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FDA U.S. FOOD & DRUG ADMINISTRATION

Search Menu

Home / Drugs / Drug Safety and Availability / FDA cautions against use of hydroxychloroquine or chloroquine for COVID-19 outside of the hospital setting or a clinical trial due to risk of heart rhythm problems

FDA cautions against use of hydroxychloroquine or chloroquine for COVID-19 outside of the hospital setting or a clinical trial due to risk of heart rhythm problems

Does not affect FDA-approved uses for malaria, lupus, and rheumatoid arthritis

"**Hydroxychloroquine** and chloroquine have **not been shown to be safe and effective for treating or preventing COVID-19.**"

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Alberta Health Services

Glimmers of hope for treatment

Remdesivir in adults with severe COVID-19: a randomised, double-blind, placebo-controlled, multicentre trial

Yeming Wang, Dingyu Zhang*, Guanhua Du*, Ronghui Du*, Jianping Zhao*, Yang Jin*, Shouzhi Fu*, Ling Gao*, Zhenshun Cheng*, Qiaofa Lu*, Yi Hu*, Guangwei Luo*, Ke Wang, Yang Lu, Huadong Li, Shuzhen Wang, Shunan Ruan, Chengqing Yang, Chunlin Mei, Yi Wang, Dan Ding, Feng Wu, Xin Tang, Xianzhi Ye, Yingchun Ye, Bing Liu, Jie Yang, Wen Yin, Aili Wang, Guohui Fan, Fei Zhou, Zhibo Liu, Xiaoying Gu, Jiuyang Xu, Lianhan Shang, Yi Zhang, Lianjun Cao, Tingting Guo, Yan Wan, Hong Qin, Yushen Jiang, Thomas Jaki, Frederick G Hayden, Peter W Horby, Bin Cao, Chen Wang*

Lancet, April 30 2020

Six-category scale at day 1		
2—hospital admission, not requiring supplemental oxygen	0	3 (4%)
3—hospital admission, requiring supplemental oxygen	129 (82%)	65 (83%)
4—hospital admission, requiring high-flow nasal cannula or non-invasive mechanical ventilation	28 (18%)	9 (12%)
5—hospital admission, requiring extracorporeal membrane oxygenation or invasive mechanical ventilation	0	1 (1%)

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	Remdesivir group (n=158)	Placebo group (n=78)	Difference*
Time to clinical improvement	21·0 (13·0 to 28·0)	23·0 (15·0 to 28·0)	1·23 (0·87 to 1·75)†
Day 28 mortality	22 (14%)	10 (13%)	1·1% (–8·1 to 10·3)
Early (≤10 days of symptom onset)	8/71 (11%)	7/47 (15%)	–3·6% (–16·2 to 8·9)
Late (>10 days of symptom onset)	12/84 (14%)	3/31 (10%)	4·6% (–8·2 to 17·4)
Clinical improvement rates			
Day 7	4 (3%)	2 (3%)	0·0% (–4·3 to 4·2)
Day 14	42 (27%)	18 (23%)	3·5% (–8·1 to 15·1)
Day 28	103 (65%)	45 (58%)	7·5% (–5·7 to 20·7)
Duration of invasive mechanical ventilation, days	7·0 (4·0 to 16·0)	15·5 (6·0 to 21·0)	–4·0 (–14·0 to 2·0)
Duration of invasive mechanical ventilation in survivors, days‡	19·0 (5·0 to 42·0)	42·0 (17·0 to 46·0)	–12·0 (–41·0 to 25·0)
Duration of invasive mechanical ventilation in non-survivors, days‡	7·0 (2·0 to 11·0)	8·0 (5·0 to 16·0)	–2·5 (–11·0 to 3·0)
Duration of oxygen support, days	19·0 (11·0 to 30·0)	21·0 (14·0 to 30·5)	–2·0 (–6·0 to 1·0)
Duration of hospital stay, days	25·0 (16·0 to 38·0)	24·0 (18·0 to 36·0)	0·0 (–4·0 to 4·0)
Time from random group assignment to discharge, days	21·0 (12·0 to 31·0)	21·0 (13·5 to 28·5)	0·0 (–3·0 to 3·0)
Time from random group assignment to death, days	9·5 (6·0 to 18·5)	11·0 (7·0 to 18·0)	–1·0 (–7·0 to 5·0)
Six-category scale at day 7			
1—discharge (alive)	4/154 (3%)	2/77 (3%)	OR 0·69 (0·41 to 1·17)§
2—hospital admission, not requiring supplemental oxygen	21/154 (14%)	16/77 (21%)	..
3—hospital admission, requiring supplemental oxygen	87/154 (56%)	43/77 (56%)	..
4—hospital admission, requiring high-flow nasal cannula or non-invasive mechanical ventilation	26/154 (17%)	8/77 (10%)	..
5—hospital admission, requiring extracorporeal membrane oxygenation or invasive mechanical ventilation	6/154 (4%)	4/77 (5%)	..
6—death	10/154 (6%)	4/77 (5%)	..
Six-category scale at day 14			
1—discharge (alive)	39/153 (25%)	18/78 (23%)	OR 1·25 (0·76 to 2·04)§
2—hospital admission, not requiring supplemental oxygen	21/153 (14%)	10/78 (13%)	..
3—hospital admission, requiring supplemental oxygen	61/153 (40%)	28/78 (36%)	..
4—hospital admission, requiring high-flow nasal cannula or non-invasive mechanical ventilation	13/153 (8%)	8/78 (10%)	..
5—hospital admission, requiring extracorporeal membrane oxygenation or invasive mechanical ventilation	4/153 (3%)	7/78 (9%)	..
6—death	15/153 (10%)	7/78 (9%)	..

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NIH National Institutes of Health
Turning Discovery Into Health

https://www.nih.gov/news-events/news-release/remdesivir-accelerates-recovery-advanced-covid-

Preliminary results indicate that patients who received remdesivir had a **31% faster time to recovery than those who received placebo (p<0.001**). Specifically, the median time to recovery was 11 days for patients treated with remdesivir compared with 15 days for those who received placebo. Results also suggested a survival benefit, with a **mortality rate of 8.0%** for the group receiving remdesivir **versus 11.6%** for the placebo group (**p=0.059**).

RESEARCH UPDATE

DR. MICHAEL PARKINS

Gilead

Press Releases

April 29, 2020

Gilead Announces Results From Phase 3 Trial of Investigational Antiviral Remdesivir in Patients With Severe COVID-19

-- Study Demonstrates Similar Efficacy with 5- and 10-Day Dosing Durations of Remdesivir --

FDA

FACT SHEET FOR HEALTH CARE PROVIDERS
EMERGENCY USE AUTHORIZATION (EUA) OF REMDESIVIR (GS-5734™)

The U.S. Food and Drug Administration (FDA) has issued an Emergency Use Authorization (EUA) to permit the emergency use of the unapproved product remdesivir for treatment of suspected or laboratory confirmed coronavirus disease 2019 (COVID-19) in adults and children hospitalized with severe disease. Severe disease is defined as patients with an oxygen saturation (SpO2) ≤ 94% on room air or requiring supplemental oxygen or requiring mechanical ventilation or requiring extracorporeal membrane oxygenation (ECMO).

Trials in Calgary

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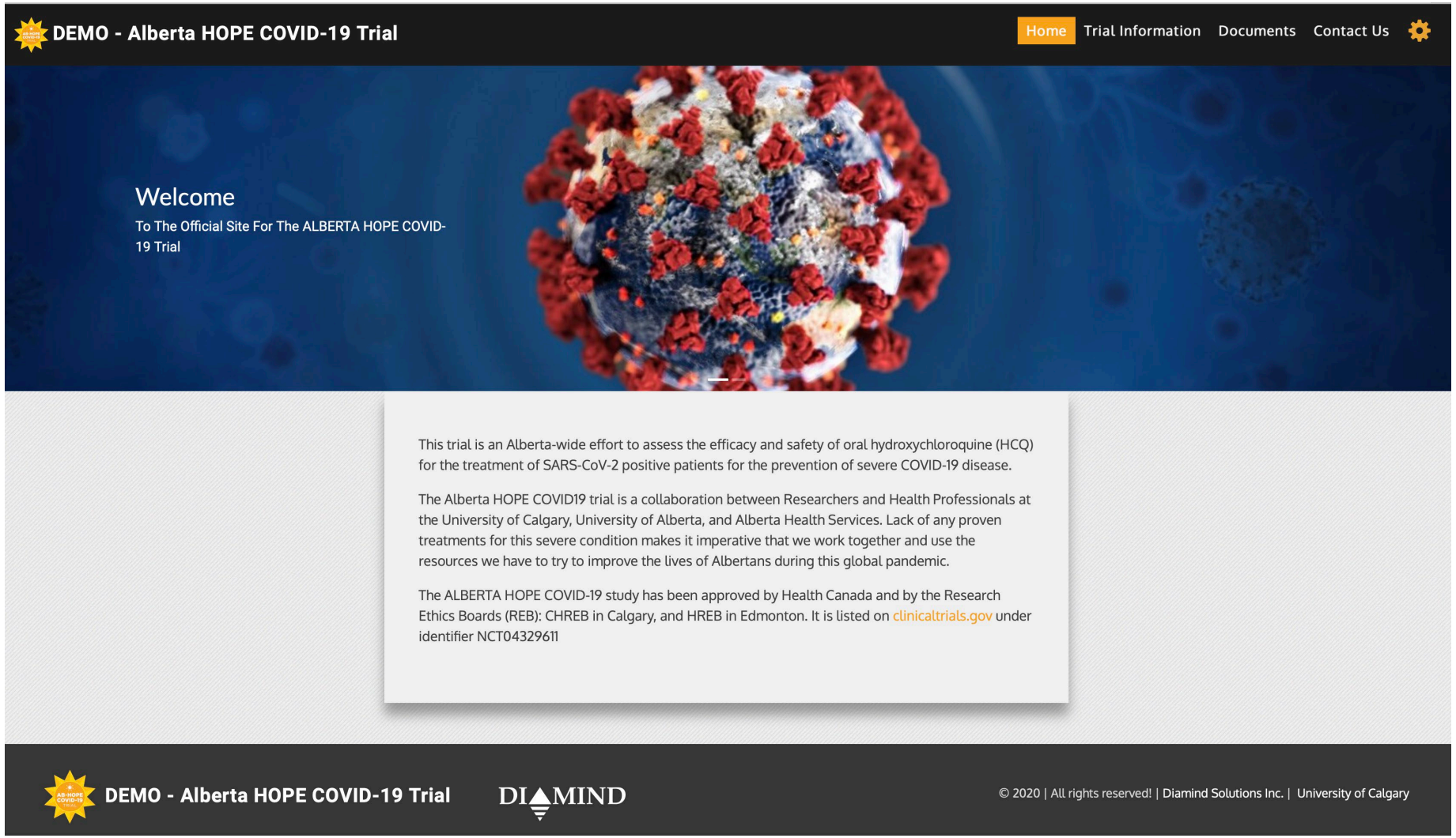

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COVID-19 is an emerging, rapidly evolving situation.
Get the latest public health information from CDC: https://www.coronavirus.gov.
Get the latest research information from NIH: https://www.nih.gov/coronavirus.

NIH U.S. National Library of Medicine
ClinicalTrials.gov

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Save this study

Treatments for COVID-19: Canadian Arm of the SOLIDARITY Trial (CATCO)

The safety and scientific validity of this study is the responsibility of the study sponsor and investigators. Listing a study does not mean it has been evaluated by the U.S. Federal Government. Know the risks and potential benefits of clinical studies and talk to your health care provider before participating. Read our disclaimer for details.

ClinicalTrials.gov Identifier: NCT04330690

Recruitment Status : Recruiting
First Posted : April 1, 2020
Last Update Posted : April 29, 2020

See Contacts and Locations

Sponsor:
Sunnybrook Health Sciences Centre

Collaborators:
AbbVie
Apotex Inc.

Information provided by (Responsible Party):
Sunnybrook Health Sciences Centre

Study Details | Tabular View | No Results Posted | Disclaimer | How to Read a Study Record

Study Description

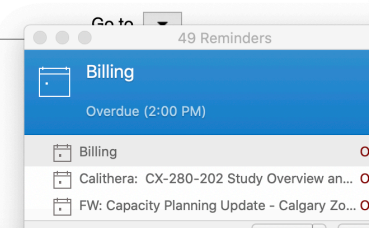
Brief Summary:

This study is an adaptive, randomized, open-label, controlled clinical trial, in collaboration with countries around the world through the World Health Organization.

Subjects will be randomized to receive either standard-of-care products or the study medication plus standard of care, while being hospitalized for COVID-19.

Participants will be randomized to one of the following groups:

1. Lopinavir/ritonavir 400mg/100mg PO BID for 14 day plus optimized supportive care, OR



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NIH U.S. National Library of Medicine
ClinicalTrials.gov

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Save this study

CONvalescent Plasma for Hospitalized Adults With COVID-19 Respiratory Illness (CONCOR-1) (CONCOR-1)

The safety and scientific validity of this study is the responsibility of the study sponsor and investigators. Listing a study does not mean it has been evaluated by the U.S. Federal Government. Know the risks and potential benefits of clinical studies and talk to your health care provider before participating. Read our disclaimer for details.

ClinicalTrials.gov Identifier: NCT04348656

Recruitment Status : Not yet recruiting
First Posted : April 16, 2020
Last Update Posted : April 29, 2020

See Contacts and Locations

Sponsor:
Hamilton Health Sciences Corporation

Collaborators:
Canadian Blood Services
Héma-Québec
University of Toronto
Université de Montréal

Information provided by (Responsible Party):
McMaster University (Hamilton Health Sciences Corporation)

Study Details | Tabular View | No Results Posted | Disclaimer | How to Read a Study Record

Study Description

Brief Summary:

There is currently no treatment available for COVID-19, the acute respiratory illness caused by the novel SAR-CoV-2. Convalescent plasma from patients who have recovered from COVID-19 that conta
therapy. On March 25th, 2020, the FDA approved the use of convalescent plasma under the emergency investigational new drug (eIND) category. Randomized trials are needed to determine the efficac
plasma for acute COVID-19 infection.