COVID-19: KEEPING UP WITH A MOVING TARGET MAY 27, 2020 UPDATE

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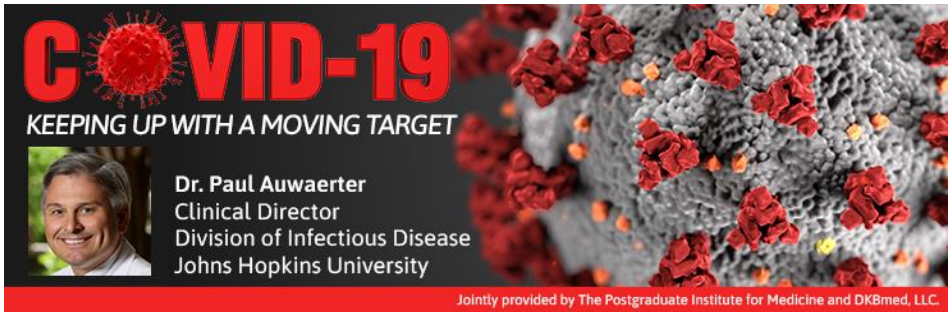
COVID-19 Keeping Up With A Moving Target

Twice Every Week @ COVID19.DKBmed.com

Every Wednesday Evening



Every Friday Morning

CME Information

Jointly provided by Postgraduate Institute for Medicine, DKBmed, and the Institute for Johns Hopkins Nursing.

Disclosure of Conflicts of Interest

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The faculty reported the following financial relationships or relationships they or their spouse/life partner have with commercial interests related to the content of this continuing education activity:

Name of Faculty or Presenter	Reported Financial Relationship
Paul G. Auwaerter, MD, MBA, FIDSA	Scientific Advisor: DiaSorin, Shionogi Inc. JNJ: Ownership equity

Dr. Auwaerter has indicated that he will be referencing the unlabeled or unapproved use of agents currently being investigated in on-going studies and trials. These include tocilizumab, remdesivir, and COVID-19 convalescent plasma. All activity, content, and materials have been developed solely by the activity directors, planning committee members, and faculty presenters, and are free of influence from a commercial entity.

CME Information

To attest for CME/CE credit, please visit

COVID19.DKBmed.com

Learning Objectives

- Describe factors associated with secondary infections
- Discuss clinical effects of viral shedding
- Discuss current data pertaining to use of remdesivir

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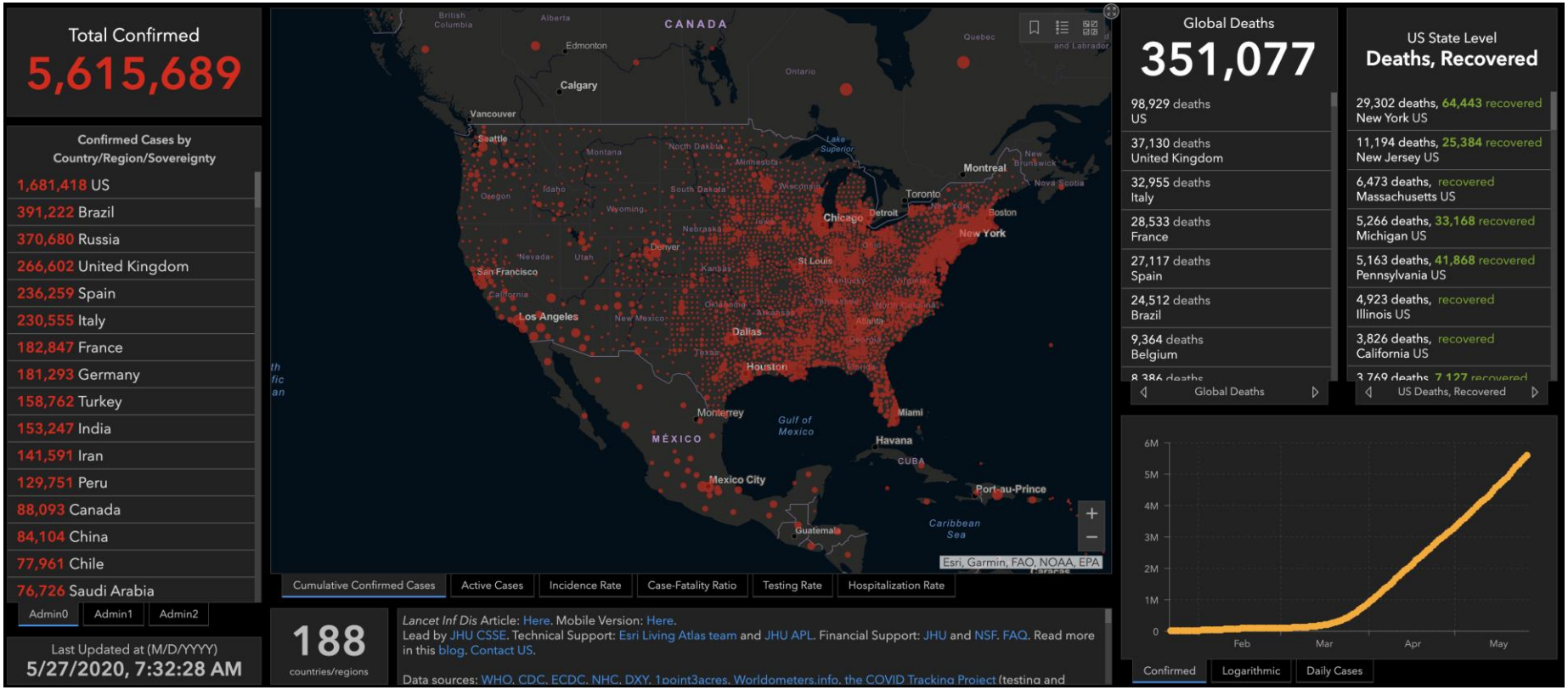
Thank You

This program is brought to you through the generous support of DKBmed, Postgraduate Institute for Medicine, and the Institute for Johns Hopkins Nursing.

Please see **COVID19.DKBmed.com** for additional resources and educational activities.

Total Cases: N. America (5/27/20)

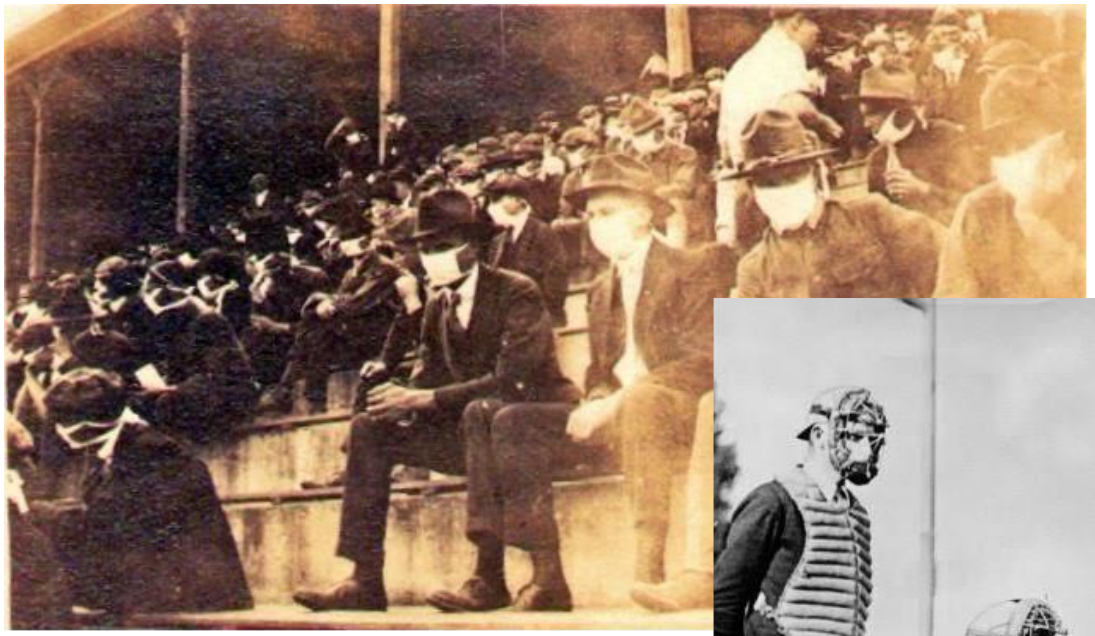


COVID-19
KEEPING UP WITH A MOVING TARGET

coronavirus.jhu.edu/map.html

dkbmed

Georgia Tech Fans & Baseball 1918



COVID-19 Patient Management

Hospitalized patients

How often does secondary infection occur?

- ICU patients 13-44%
  - Bacterial or fungal
    - Often “nosocomial” pathogens (ESBL, P. aeruginosa, A. baumannii; Aspergillus spp., Candida spp.)
  - Median time from onset of symptoms: 10-17d
  - Median time to death: 19d, terminal events?
- Factors to consider (mostly China, NY hospital reports)
  - Antibacterials received in 80-100%
  - Antifungals in 7.5-15%
  - Steroids in 25-80% of seriously ill pts

Clancy, Nyugen Clin Infect Dis 2020

Are Approaches to Tamp Down COVID-19 Inflammation Contributing to Secondary Infections?

Table 1. Co-morbidities and Outcomes			
	No tocilizumab (n=32)	Tocilizumab (n=28)	p value*
Patient characteristics and comorbidities			
Age (Mean +/- Standard Deviation)	64.09 ± 14.24	63.86 ± 16.04	
Charlson Co-morbidity Index (CCI)			0.952
Mean	4.81	3.36	
Median	4.0	4.0	
	n (%)	**n (%)**	
CCI Categories			
CCI=0	3 (9.4)	1 (3.6)	
CCI=1-2	6 (18.8)	10 (35.7)	
CCI=3-4	8 (25.0)	6 (21.4)	

Table 1. Co-morbidities and Outcomes			
	No tocilizumab (n=32)	Tocilizumab (n=28)	p value*
Infectious Outcomes			
Bacterial infections	10 (31.3)	18 (64.3)	0.010
Hospital/ventilator-acquired pneumonia	7 (21.9)	13 (46.4)	
Sepsis, other source or undefined	2 (6.25)	4 (14.3)	
Fungal infections#	0	2 (7.1)	0.096
Pneumonia	0	1 (3.6)	
Sinusitis	0	2 (7.1)	

Outcome			0.127
Discharged	16 (50)	7 (25)	
Death	8 (25)	12 (42.9)	
Still hospitalized	8 (25)	9 (32.1)	
Infectious Outcomes			
Bacterial infections	10 (31.3)	18 (64.3)	0.010
Hospital/ventilator-acquired pneumonia	7 (21.9)	13 (46.4)	
Sepsis, other source or undefined	2 (6.25)	4 (14.3)	
Fungal infections#	0	2 (7.1)	0.096
Pneumonia	0	1 (3.6)	
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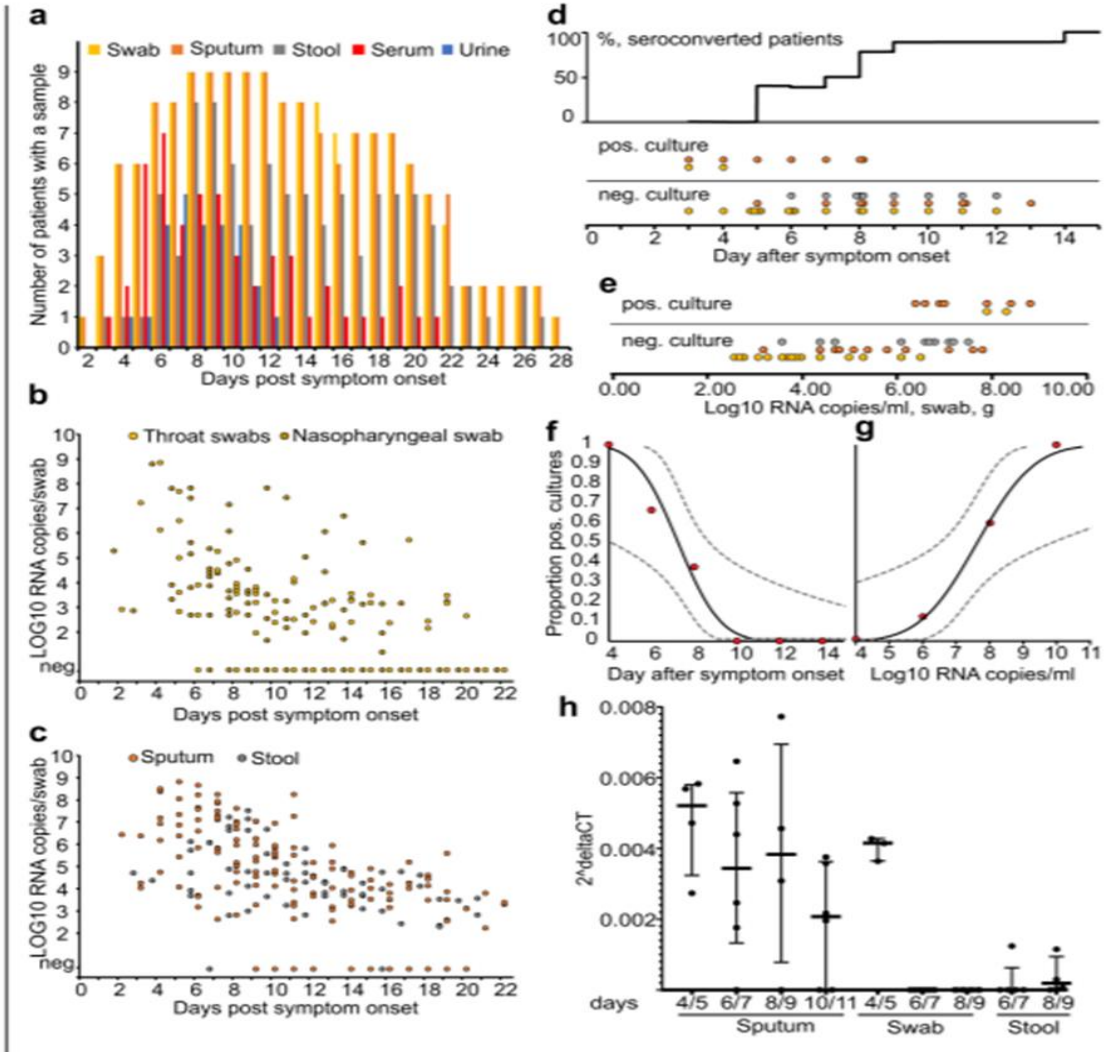
Viral Carriage/Viral Shedding

Does a (+) viral molecular test = infectious person?

Viral Shedding, How Prolonged?



Mildly ill or Asymptomatic COVID-19

Wölfel, Nature 2020

Korean CDC Analysis of "Re-Positive" SARS-CoV-2

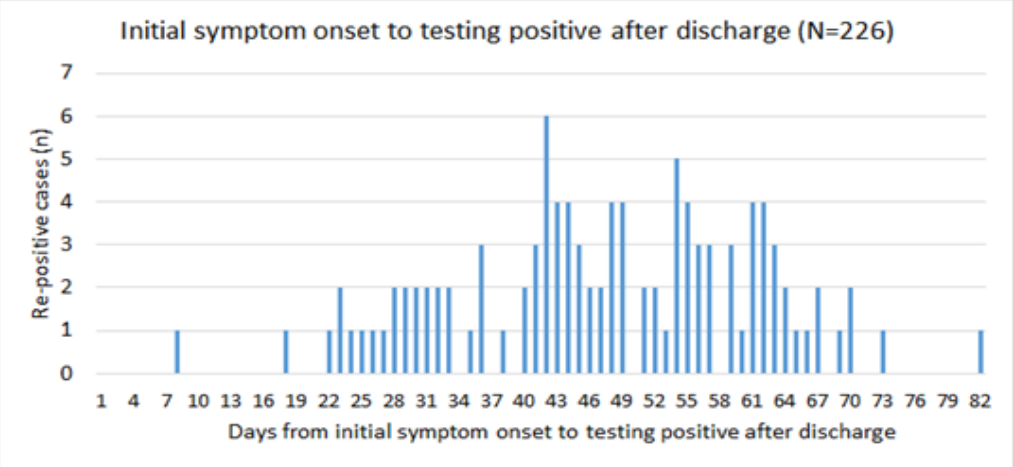
- Epidemiological investigation and contact investigation (~14d after d/c of isolation)
  - 285 (63.8%) / total 447 re-positive cases (5/15/20)
    - 59.6% tested as a screening measure
    - 37.5% for symptoms
  - 284 cases for which symptoms were investigated
    - 126 (44.7%) were symptomatic.
- Contact tracing for 790 contacts
  - (351=family; 439=others)
  - No new cases found

https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030&act=view&list_no=367267&nPage=1

Non-Infectious Despite Prolonged Shedding of Viral RNA

Time from hospital discharge to repeat testing:

Average 44.9 days
(range: 8-82 days)



Suggested protocols

For Re (+)s

	Before	After
Management of confirmed cases after discharge from isolation	14 day self-isolation recommended after discharge from isolation	Not needed
	PCR test required if symptoms appear within 14 days of discharge from isolation	Not needed
Management of cases that test positive after discharge from isolation	Re-positive cases managed similar to management of confirmed cases (isolation)	Not needed
	Contacts managed similar to management of contacts of confirmed cases (quarantine)	Not needed
Investigation of re-positive cases	Reporting of re-positive cases and investigation	Same as before
	Investigation of contacts of re-positive cases	Same as before

COVID-19 Therapies

Updates on remdesivir and convalescent plasma

Remdesivir Report

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Remdesivir for the Treatment of Covid-19 — Preliminary Report

J.H. Beigel, K.M. Tomashek, L.E. Dodd, A.K. Mehta, B.S. Zingman, A.C. Kalil, E. Hohmann, H.Y. Chu, A. Luetkemeyer, S. Kline, D. Lopez de Castilla, R.W. Finberg, K. Dierberg, V. Tapson, L. Hsieh, T.F. Patterson, R. Paredes, D.A. Sweeney, W.R. Short, G. Touloumi, D.C. Lye, N. Ohmagari, M. Oh, G.M. Ruiz-Palacios, T. Benfield, G. Fätkenheuer, M.G. Kortepeter, R.L. Atmar, C.B. Creech, J. Lundgren, A.G. Babiker, S. Pett, J.D. Neaton, T.H. Burgess, T. Bonnett, M. Green, M. Makowski, A. Osinusi, S. Nayak, and H.C. Lane, for the ACTT-1 Study Group Members*

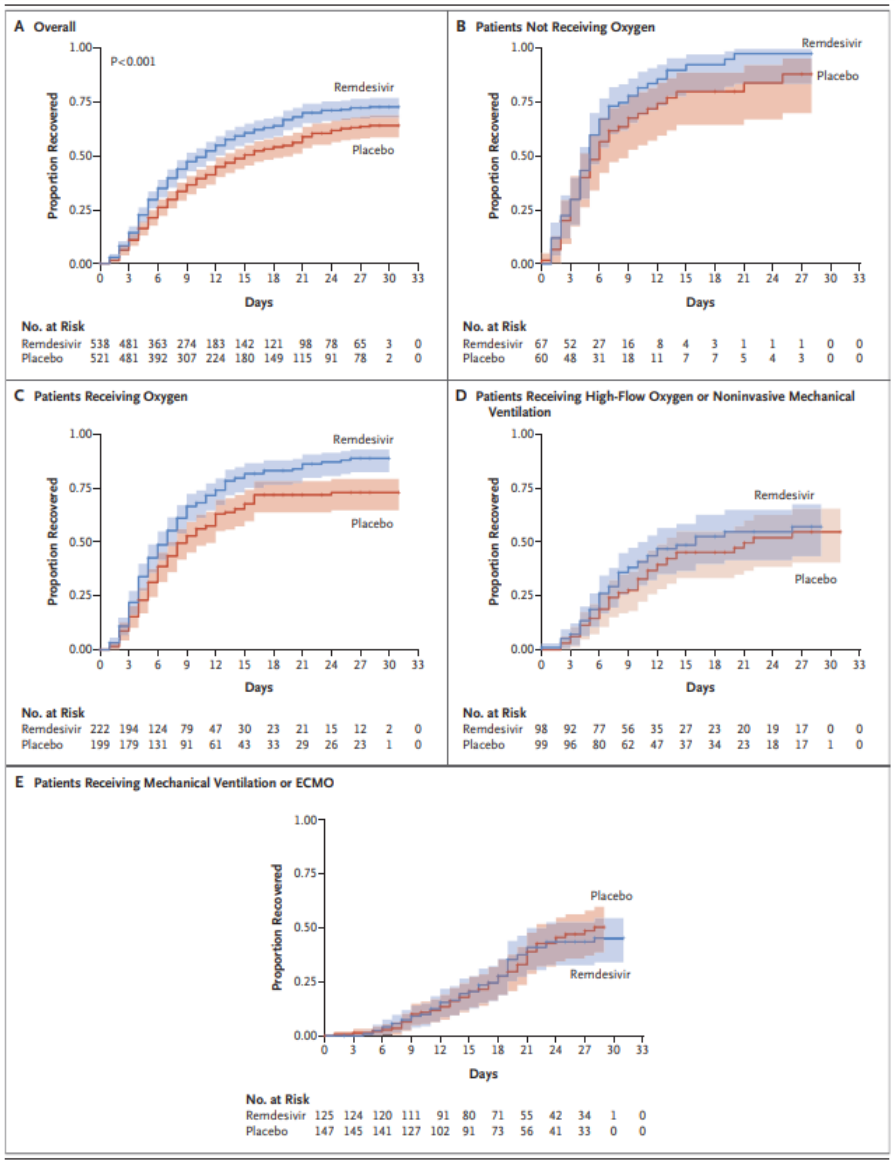
Added data to reduced LOS

14 d day (28 d in analysis)
No virologic data

Appears safe

Mechanically ventilated or ECMO patients don't Appear to benefit

O2 requiring (largest group) Most benefit

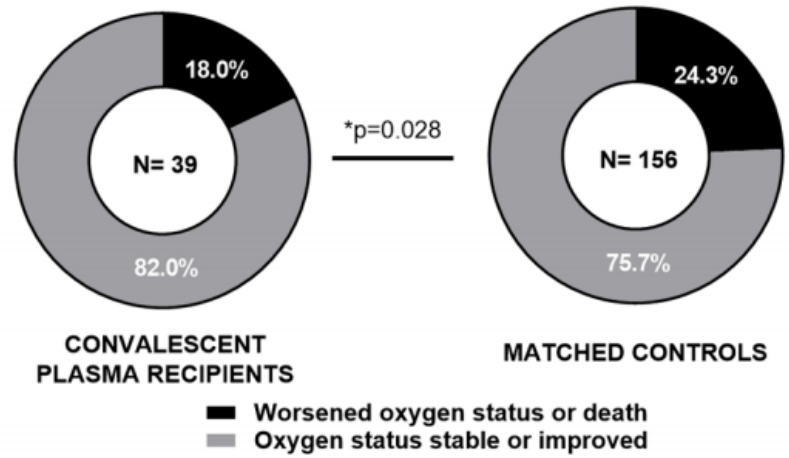


Convalescent Plasma

Convalescent plasma treatment of severe COVID-19: A matched control study

Sean T. H. Liu, M.D., Ph.D., Icahn School of Medicine at Mount Sinai

Figure 1. Comparison of oxygen requirements between Day 14 versus Day 0.



*** Covariates adjusted. No significant differences were observed at day 1 (p=0.444) or day 7 (p=0.425).**

Non-randomized

↓ O_2 OR 0.86
[95% CI: 0.75-0.98, p=0.028]

↑ Survival HR 0.19
[95% CI: 0.05-.72, p=0.015]
Non-intubated patients only

To submit your own question, please email QA@dkbmed.com

Are there any predisposing factors or conditions that have been identified for the multisystem inflammatory syndrome in children outside of COVID-19?

Are we any closer to more reliable serum antibody testing?

To receive CME/CE credit:

- Complete the evaluation on at COVID19.DKBmed.com
- Upon registering and successfully completing the activity evaluation, you will have immediate access to your certificate.

To access more resources related to COVID-19:

- Access our resource hub at COVID19.DKBmed.com

To ask your own question to Dr. Auwaerter:

- Email QA@dkbmed.com