Impact of COVID-19 on Liver Diseases

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Stanford University

65 yr old Male
Alcohol Cirrhosis, HTN

Mar 18

International traveled back home to Bay Area

Tests Negative SARS-Co-V2
Treated with Augmentin

Mar 26

Apr 2

Admitted with hypoxia.
COVID-19+

Multiple family members test positive

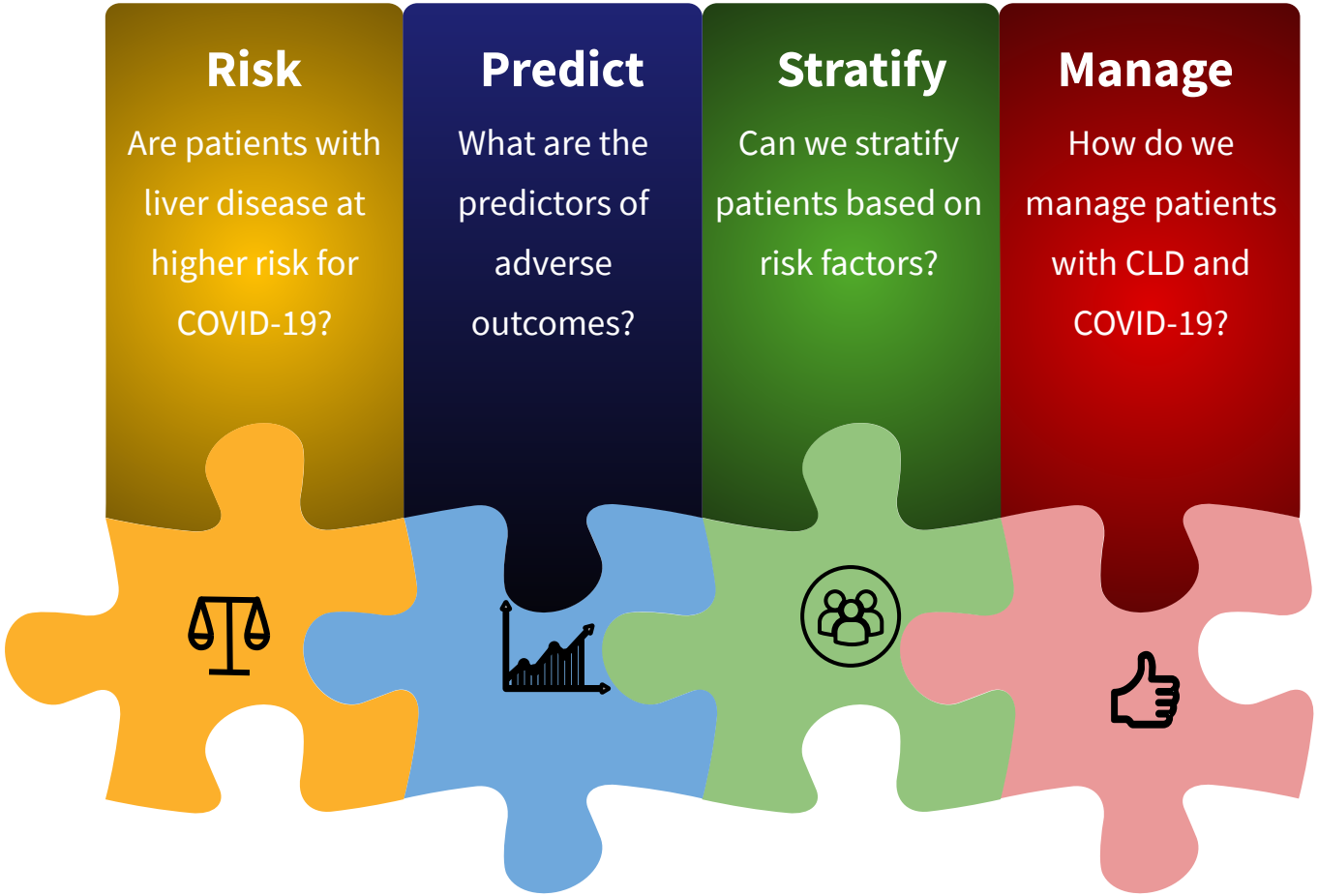
Apr 4

Apr 15

ICU, Mechanical ventilation
Multiorgan failure
Deceased

AST	ALT
88	48
132	55
919	392
7000	2900

Questions


Risk
Are patients with liver disease at higher risk for COVID-19?
Predict
What are the predictors of adverse outcomes?
Stratify
Can we stratify patients based on risk factors?
Manage
How do we manage patients with CLD and COVID-19?

Does Pre-existing Liver Disease Increase Risk for Mortality from COVID-19?

nature
International journal of science

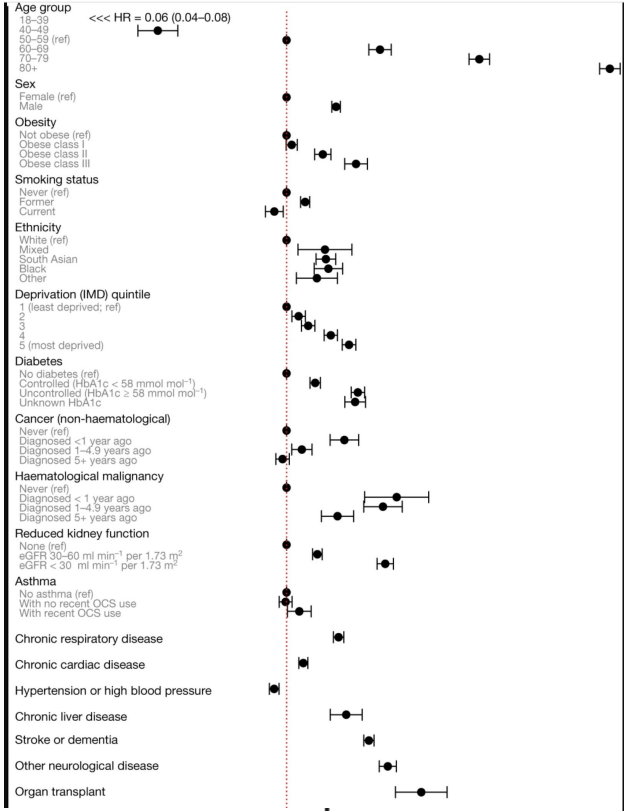
Article | Published: 08 July 2020

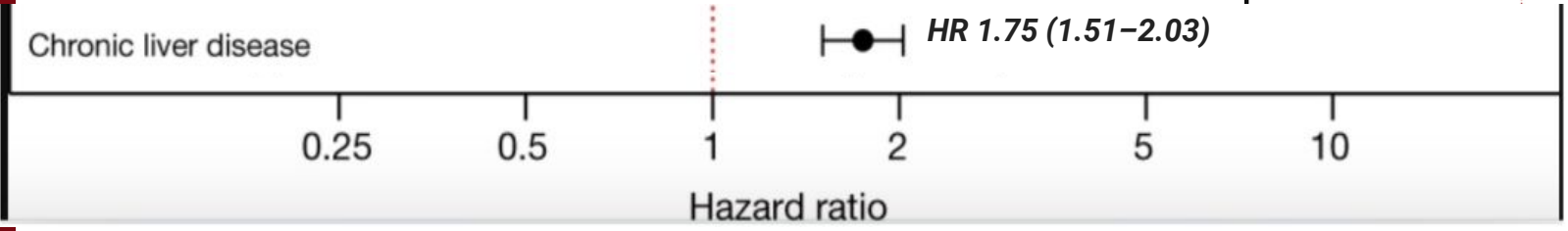
Factors associated with COVID-19-related death using OpenSAFELY

Elizabeth J. Williamson, Alex J. Walker, [...] Ben Goldacre

Nature **584**, 430–436(2020) | Cite this article

17.3 million adults, 100K (0.6%) with Liver Diseases
11K COVID-19-related deaths- 181 (0.18%) among patients with Liver Diseases





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Do Liver Transplant Recipients have Increased Risk for Mortality from COVID-19?

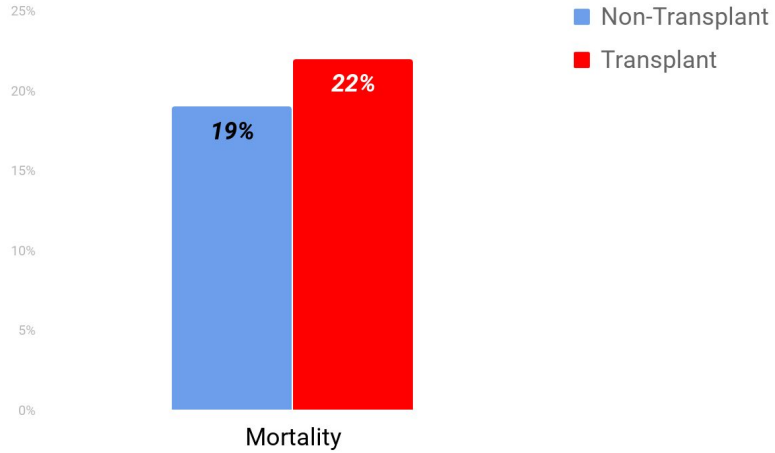
TRANSPLANT INFECTIOUS DISEASE

SHORT COMMUNICATION | Free Access

COVID-19 in solid organ transplant recipients: No difference in survival compared to general population

Matteo Rinaldi, Michele Bartoletti, Linda Bussini, Livia Pancaldi, Renato Pascale, Giorgia Comai, Mariacristina Morelli, Matteo Ravaioli, Matteo Cescon, Francesco Cristini ... See all authors

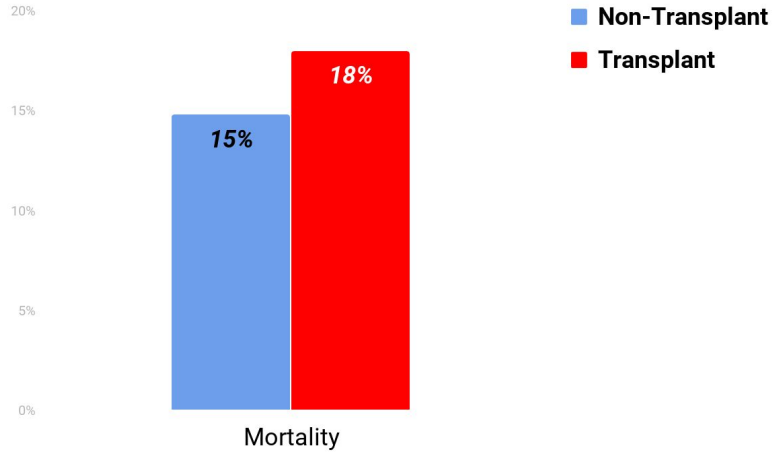
First published: 20 July 2020 | https://doi.org/10.1111/tid.13421



Journal of Hepatology
Available online 1 August 2020
In Press, Journal Pre-proof

Epidemiological pattern, incidence and outcomes of COVID-19 in liver transplant patients.

Jordi Colmenero PhD, Manuel Rodríguez-Perálvarez PhD, Magdalena Salcedo PhD, Ana Arias-Milla MD, Alejandro Muñoz-Serrano MD, Javier Graus MD, Javier Nuño MD, Mikel Gastaca MD, Javier Bustamante-Schneider MD, Alba Cachero MD, Laura Lladó MD, Aránzazu Caballero MD, Ainhoa Fernández-Yunquera MD, Carmelo Loinaz MD, Inmaculada Fernández MD, Constantino Fondevila PhD, Miquel Navasa MD, Mercedes Iñarrairaegui PhD ... José Antonio Pons PhD *



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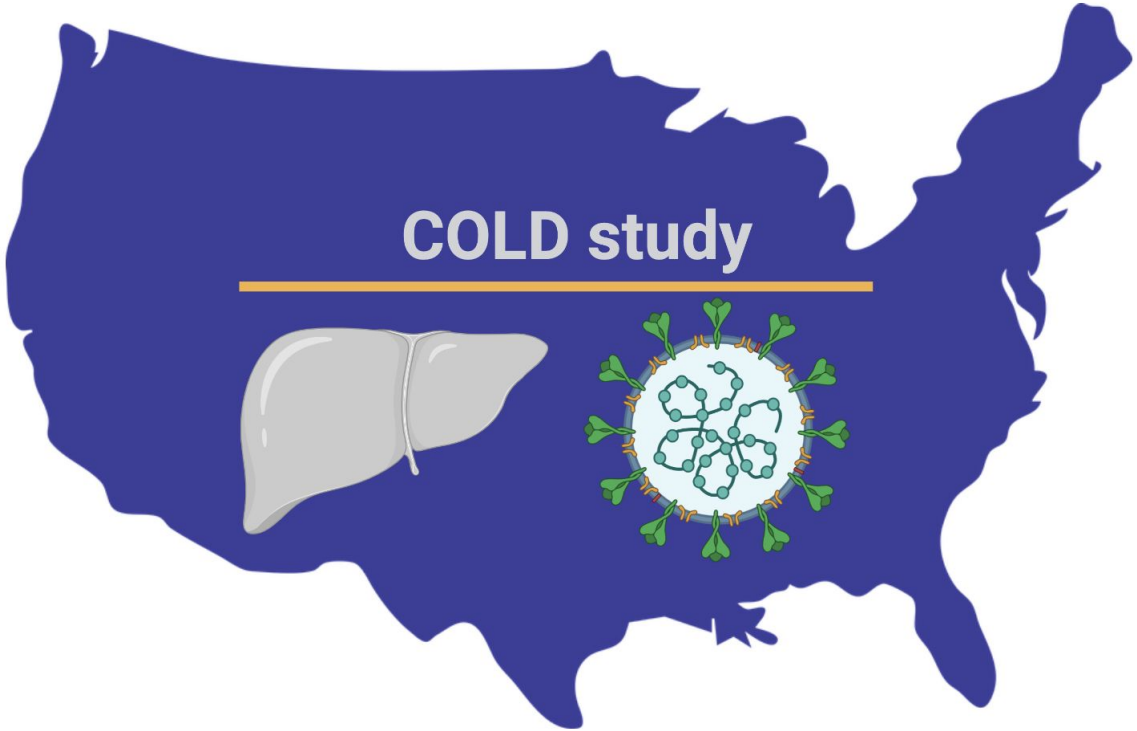
What are the Predictors of Mortality among Patients with CLD?

COVID-19 in Chronic **L**iver **D**iseases (COLD study)



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Participating Centers

California

1. Stanford University
2. UCSF Fresno
3. University of Southern California

New York

4. Weill Cornell Medicine
5. Mount Sinai School of Medicine

Massachusetts

6. Massachusetts General Hospital
7. Brigham and Women's Hospital
8. Beth Israel Deaconess Medical Center

Florida

9. University of Miami

Louisiana

10. Ochsner Medical Center

Minnesota

11. Hennepin County Medical Center Minneapolis
12. University of Minnesota

North Carolina

13. Duke University

Pennsylvania

14. University of Pennsylvania
15. University of Pittsburgh Medical Center

Illinois

16. Rush University Medical Center

Ohio

17. University Hospitals Cleveland Medical Center

Kansas

18. The University of Kansas Medical Center

Michigan

19. University of Michigan

Arizona

20. University of Arizona/BannerHealth
21. Mayo Clinic

Washington D.C

22. VA Medical Center
23. Georgetown University

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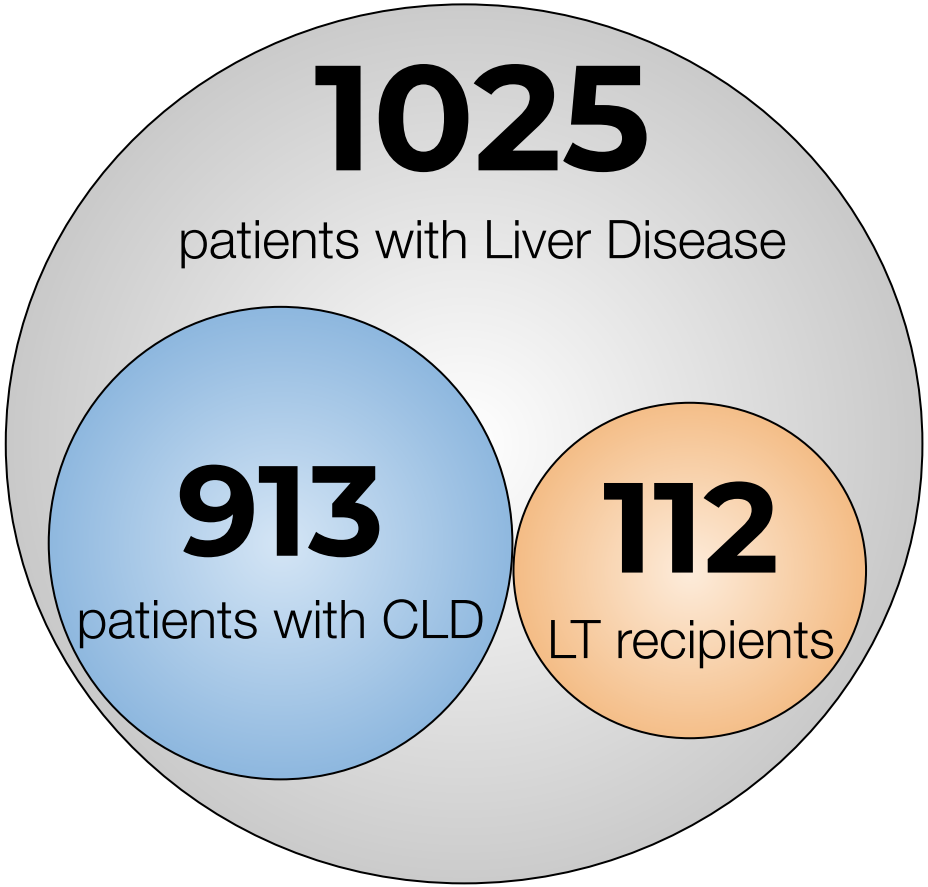
COLD Study Cohort



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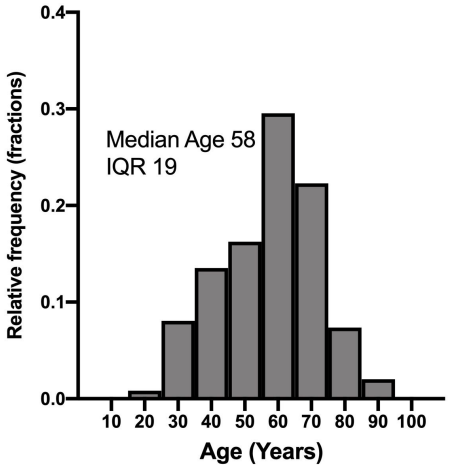
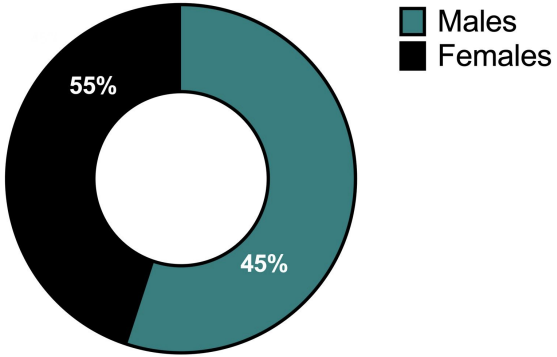
Demographics

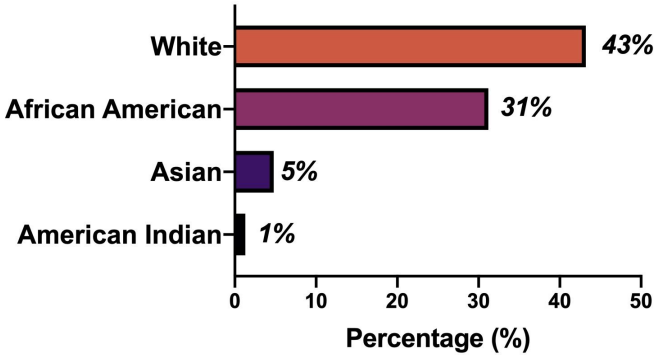
Age



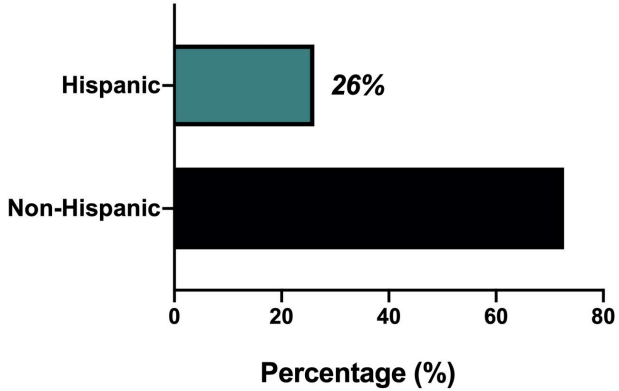
Gender



Race



Ethnicity



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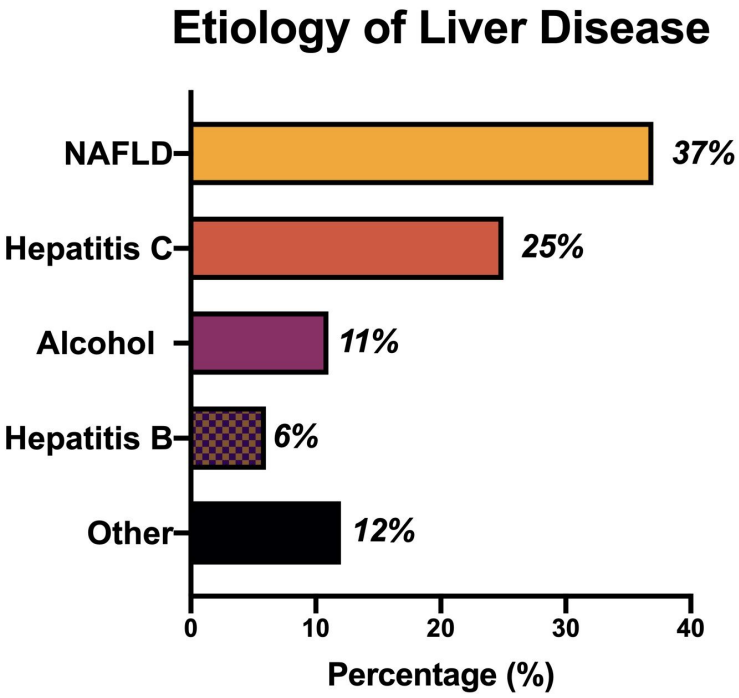
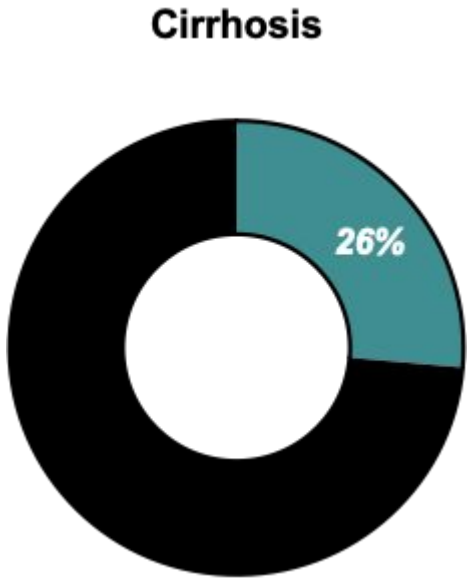
Chronic Liver Disease





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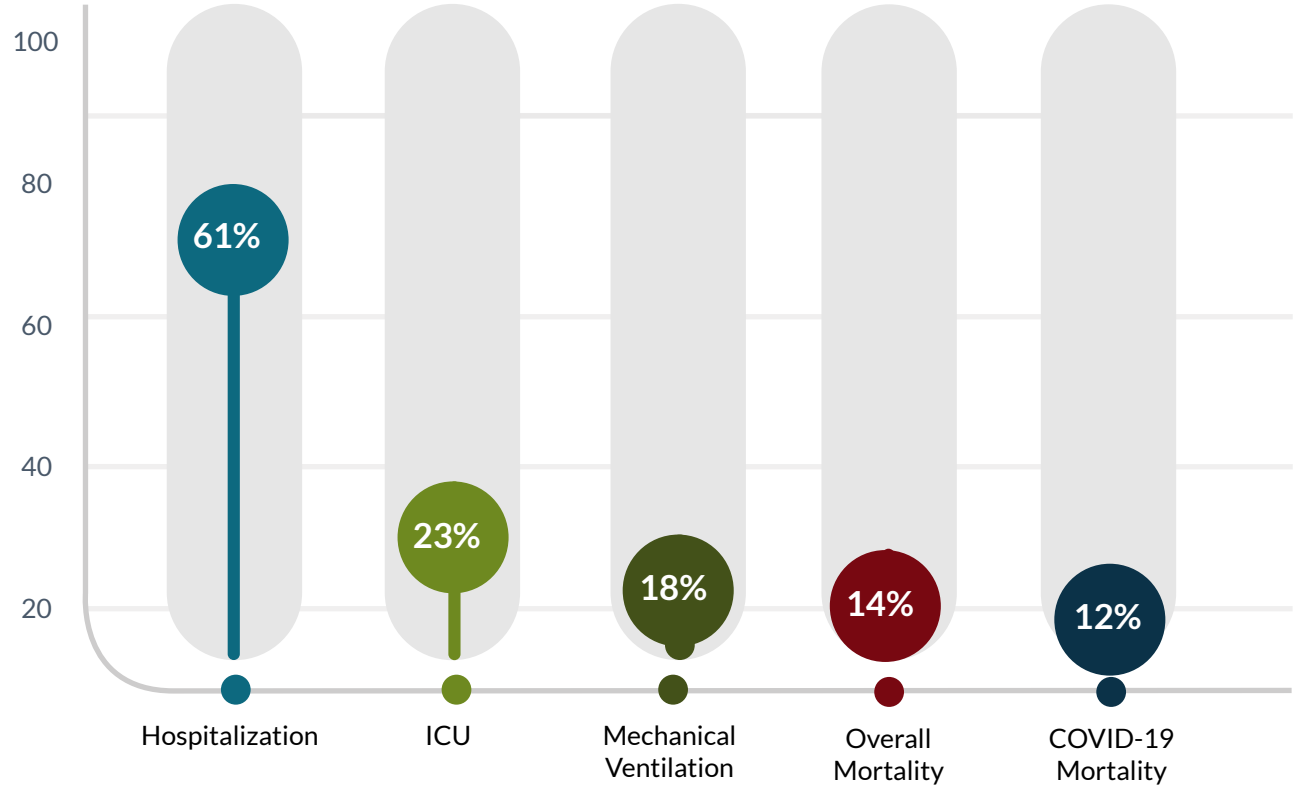
Clinical Outcomes in CLD



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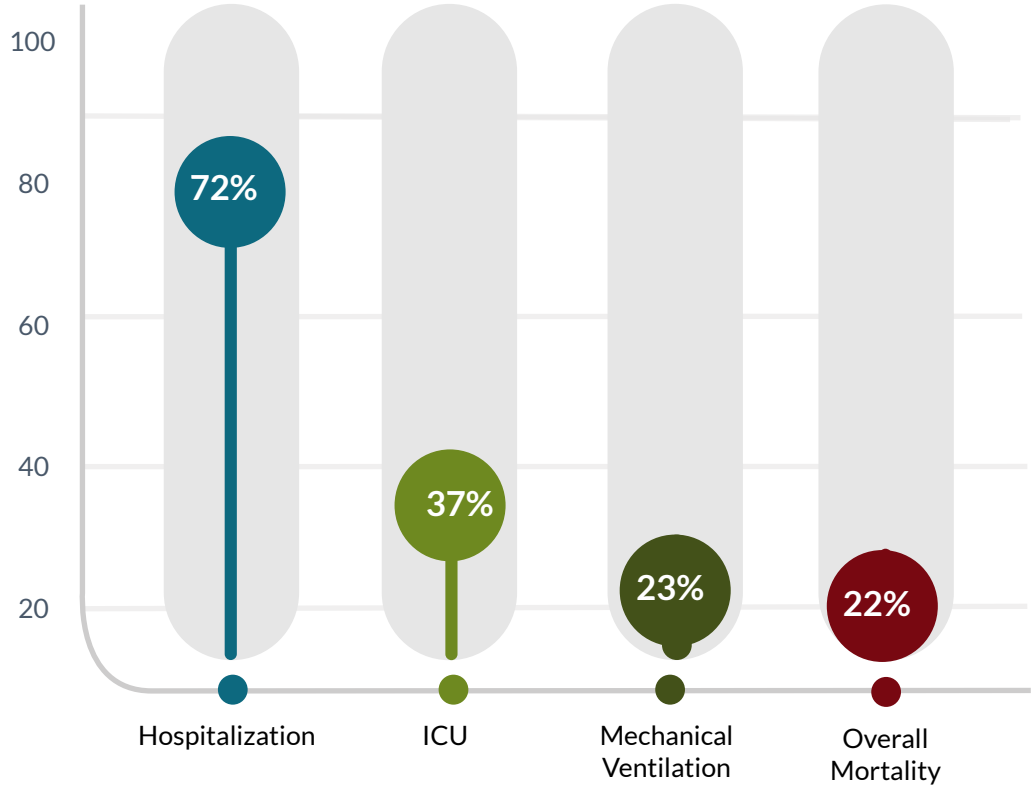
Clinical Outcomes in Liver Transplant Recipients



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GI symptoms associated with severe COVID-19

	Total population	All-cause Mortality status (n=825)		*P* value	Severe COVID-19 (n=852)		*P* value
		Alive	Died		No	Yes	
GI symptom							
Diarrhea (n=715)	190 (26.6)	163 (27.2)	23 (26.4)	0.886	47 (18.9)	141 (30.7)	**0.001**
Nausea/vomiting (n=738)	183 (24.8)	159 (25.6)	19 (21.8)	0.448	47 (18.0)	134 (28.5)	**0.002**
Anorexia (n=614)	150 (24.4)	122 (23.7)	24 (30.8)	0.179	30 (14.5)	119 (29.8)	**<0.001**
Anosmia (n=517)	71 (13.7)	62 (14.2)	7 (10.9)	0.477	33 (19.5)	38 (11.1)	**0.010**

Abbreviation: COVID-19, coronavirus disease 2019. Data are expressed as the number (proportion).

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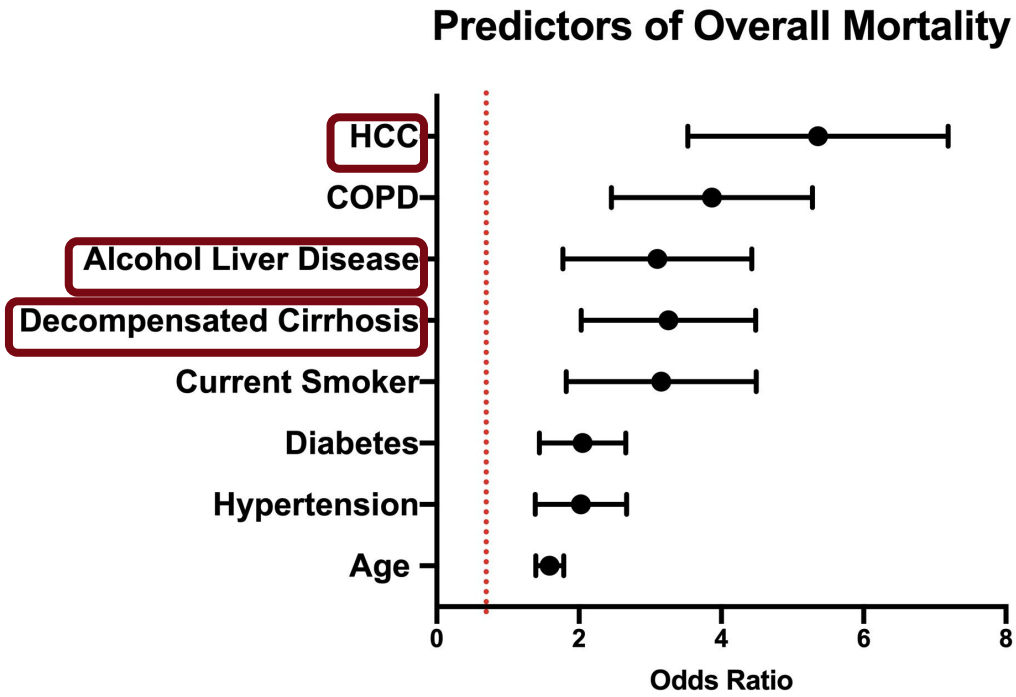
Predictors of Mortality in CLD and COVID-19

The multivariate model for all-cause mortality was adjusted for

- age,
- sex,
- race/ethnicity,
- etiology of CLD,
- cirrhosis,
- hepatic decompensation,
- HCC,
- diabetes,
- hypertension,
- cardiovascular disease,
- chronic obstructive pulmonary disease (COPD),
- smoking status, and
- alcohol consumption,



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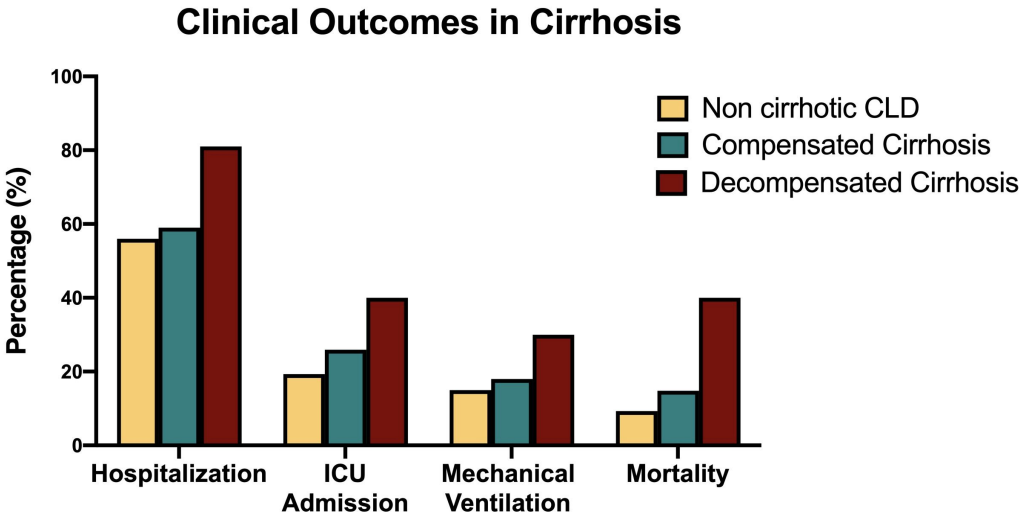
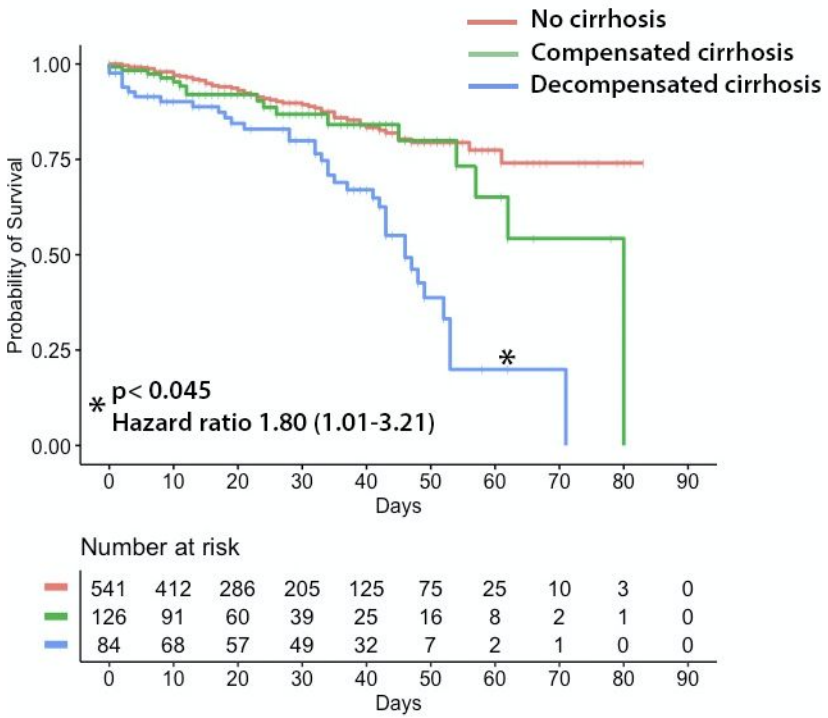
Decompensated cirrhosis has worse outcomes





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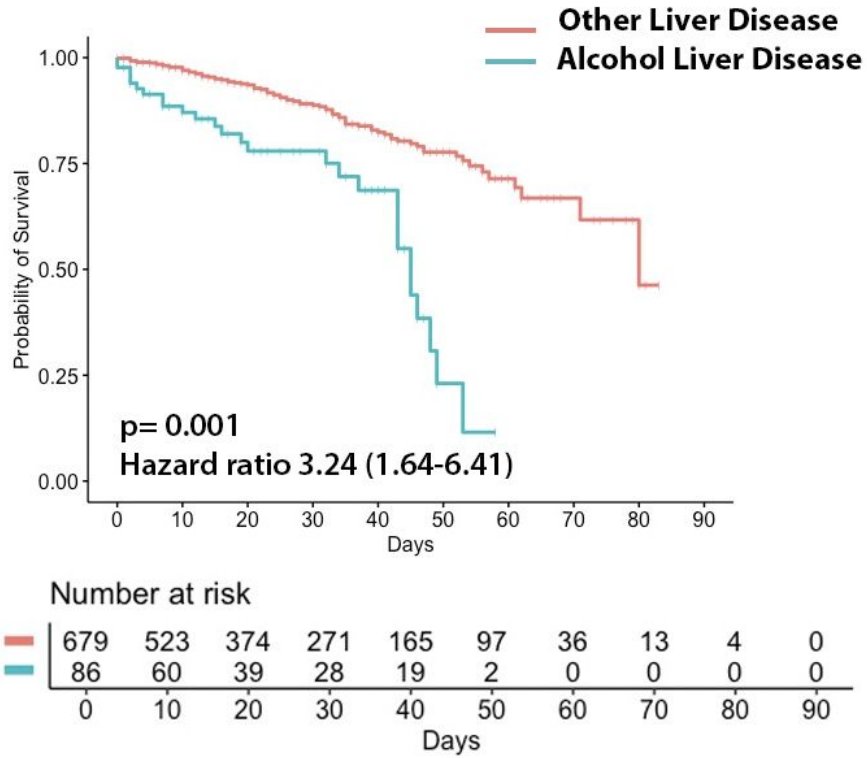
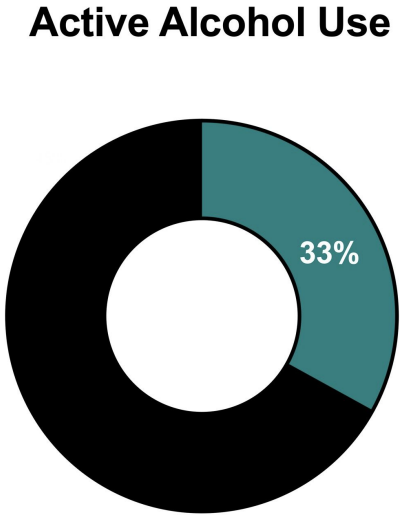
Alcohol Related Liver Disease





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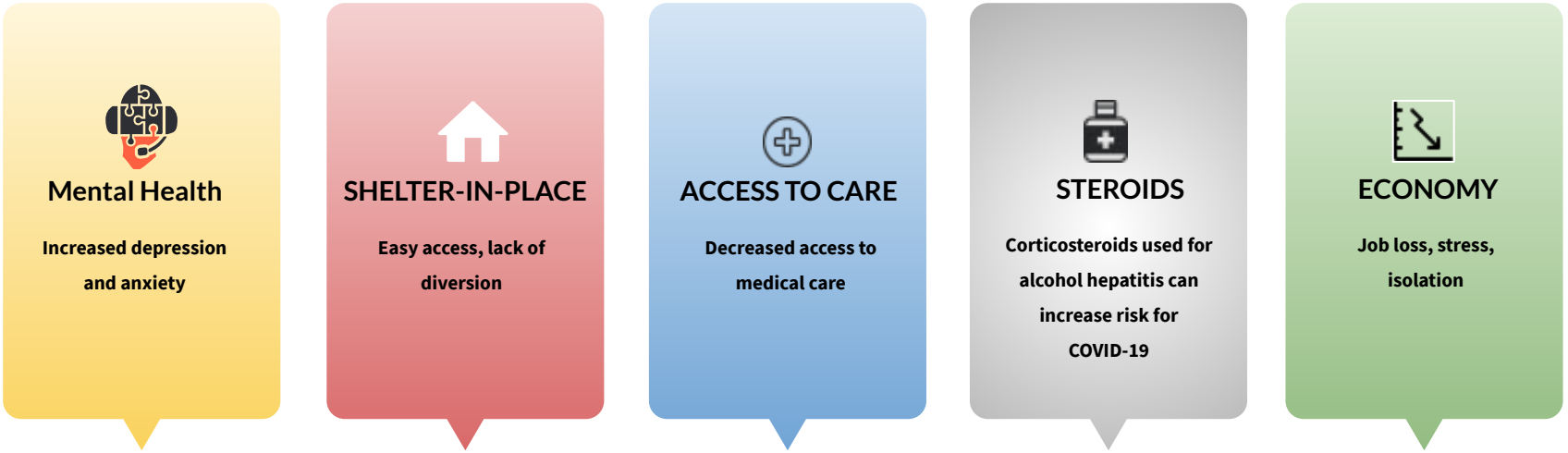
Alcohol Liver Disease and COVID-19



THE WALL STREET JOURNAL.

LIFE & ARTS | YOUR HEALTH

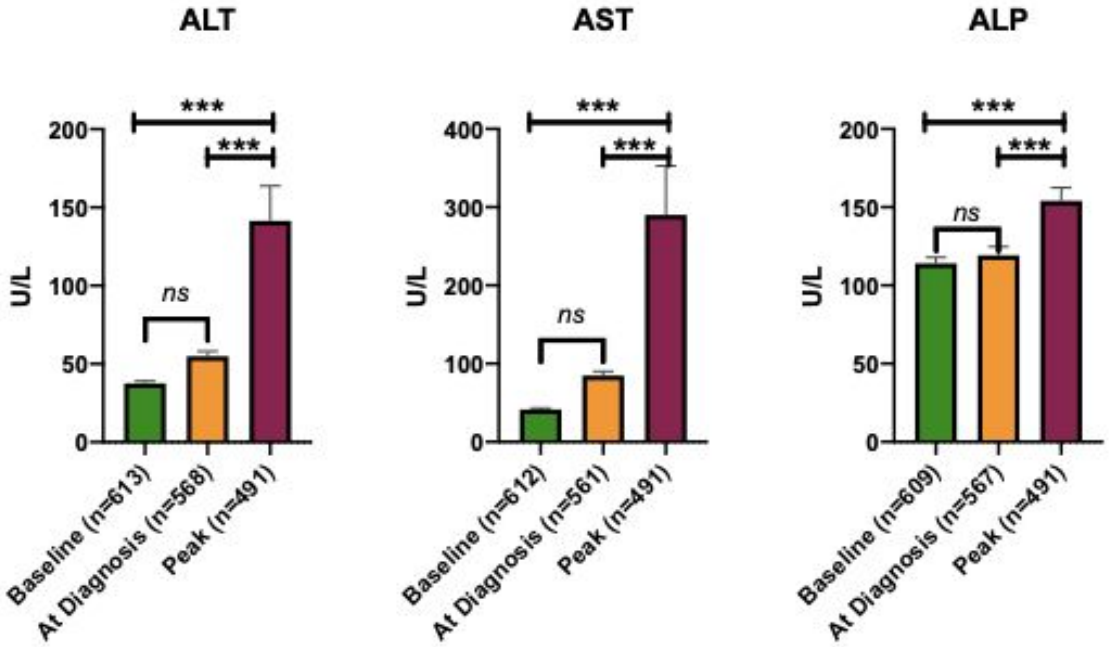
Men Urged to Limit Alcohol to One Drink a Day Amid New Concerns

A federal committee's recommendation for new U.S. dietary guidelines comes on the heels of a 20-year rise in Americans' drinking

Liver Injury in Patients with CLD and COVID-19

Liver Injury in Patients with CLD

No/Minimal Liver Injury (ALT <2x ULN)	55%
Moderate Liver Injury (ALT 2-5x ULN)	**28%**
Severe Liver Injury (ALT >5x ULN	**17%**



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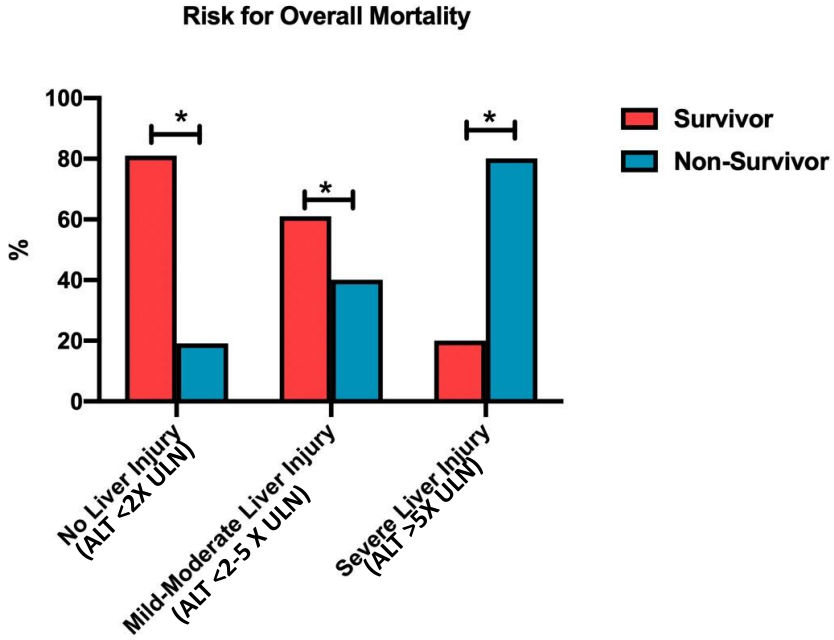
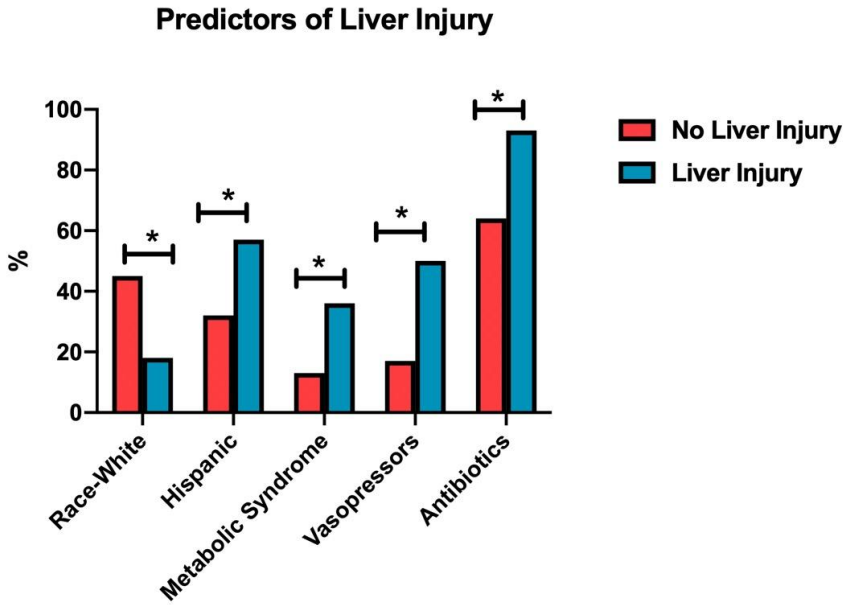
Liver Injury and Mortality





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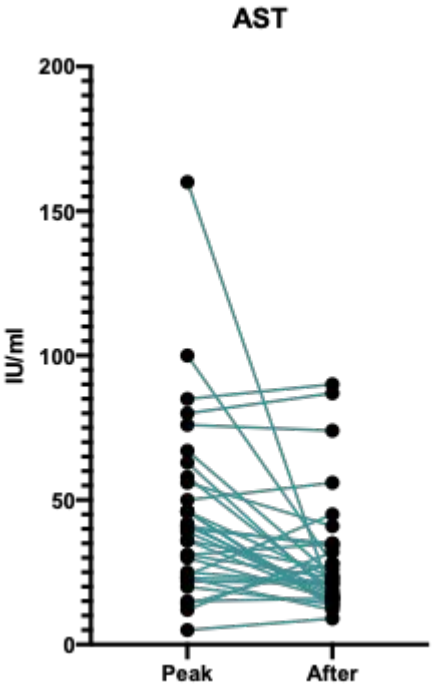
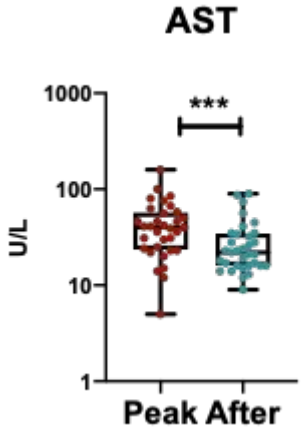
Normalization of Liver Injury with resolution of COVID-19





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65 yr old Hispanic, Male
Alcohol Cirrhosis, HTN

Mar 8

International traveled
back home to Bay Area

Tests Negative SARS-Co-V2

Treated

Mar 26

1. CLD, Cirrhosis→ ↑ risk for mortality with COVID-19.

2. Alcohol liver disease higher mortality

3. Liver Injury is common. Is multifactorial.

4. Monitor closely, predicts mortality.

Multiple

	AST	ALT
Mar 26	88	48
Apr 1	132	55
Apr 8	919	392
Apr 15	7000	2900

Apr 15

ICU, Mechanical ventilation
Multiorgan failure
Deceased

Thank you


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