

2020 GI AND LIVER SYMPOSIUM



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Update: COVID-19 and Liver Diseases

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Outline

- Effect of SARS-CoV-2 on the liver
- Evaluation of COVID-19 patients w/elevated liver biochemistries
- Chronic liver disease and cirrhosis
- Liver transplantation

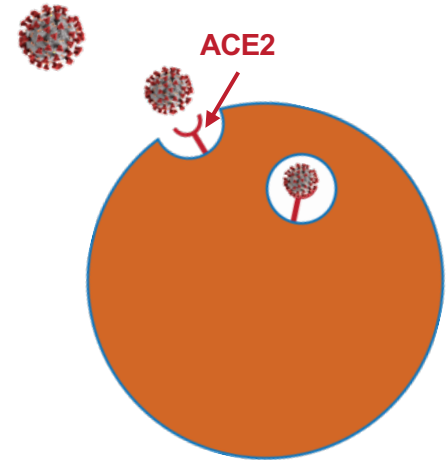
Disclosure



- I have no relevant financial disclosures

Effect of SARS-CoV-2 on the Liver

- ACE2 is present on biliary and liver epithelial cells
- American autopsy series:
 - Macrovesicular steatosis
 - Mild acute hepatitis
 - Mild portal inflammation
 - SARS-CoV-2 viral RNA detectable by PCR in liver tissue samples

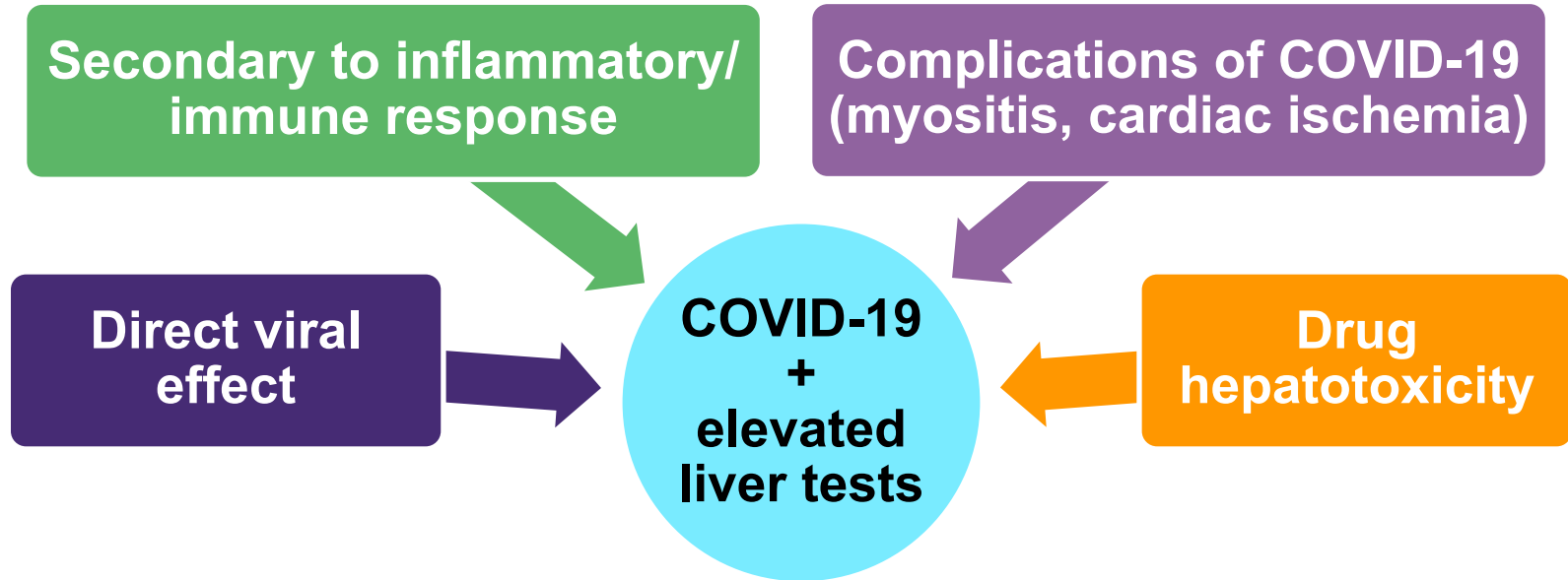


Effect of SARS-CoV-2 on the Liver

- Incidence of elevated liver biochemistries: 14%-83% in hospitalized COVID-19 patients
- AST/ALT 1-2x ULN, mildly elevated bilirubin, usually self-limited
- Liver injury more common in severe COVID-19
- Rare cases of severe acute hepatitis
- Usually AST>ALT, assoc w/severe COVID-19, mortality

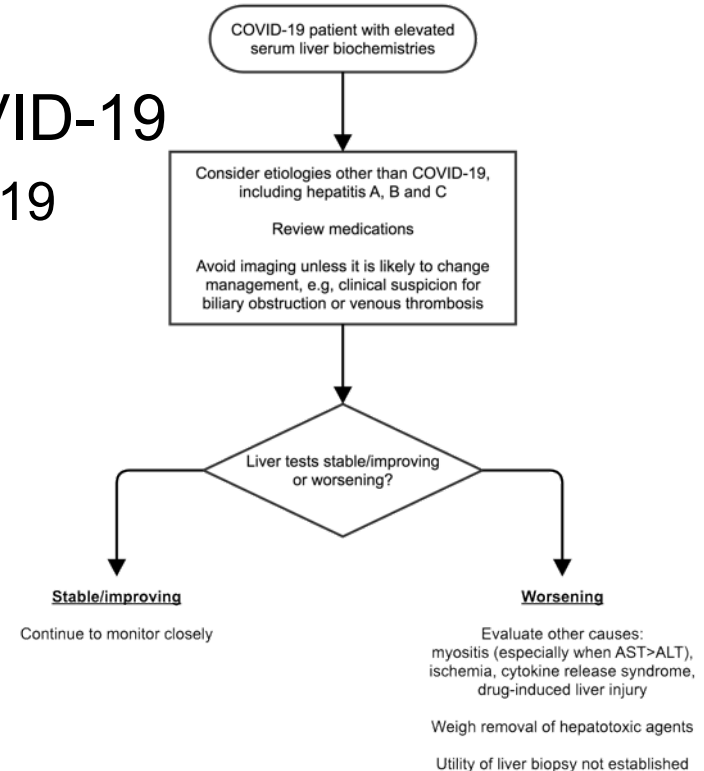
Guan W-J et al N Engl J Med 2020; Chen N et al Lancet 2020; Fan Z et al Clin Gastroenterol Hepatol 2020; Huang C et al Lancet 2020; Xu L et al Liver Int 2020; Zhang C et al Lancet Gastroenterol Hepatol 2020; Richardson S et al JAMA 2020; Phipps MM et al Hepatology 2020; Ferm S et al Clin Gastroenterol Hepatol 2020; Hundt MA et al Hepatology 2020; Redd WD et al Gastroenterology 2020; Lei F et al Hepatology 2020; Wander P et al Am J Gastroenterol 2020

Effect of SARS-CoV-2 on the Liver



Evaluation of COVID-19 Patients with Elevated Liver Biochemistries

- Do not assume elevated liver biochemistries are because of COVID-19
 - Consider etiologies other than COVID-19 (HAV, HBV, HCV)
 - Myositis (AST>ALT)
 - Ischemia
 - Cytokine release syndrome
 - DILI
 - Liver biopsy?



Evaluation of COVID-19 Patients with Elevated Liver Biochemistries

- Monitor liver tests in all hospitalized COVID-19 patients, especially if treated with remdesivir or tocilizumab
- Abnormal liver biochemistries should not be a contraindication to using investigational or off-label therapeutics for COVID-19

Chronic Liver Disease and Cirrhosis

Chronic liver disease and cirrhosis are risk factors for COVID-19-related morbidity and mortality

Chronic Liver Disease and Cirrhosis

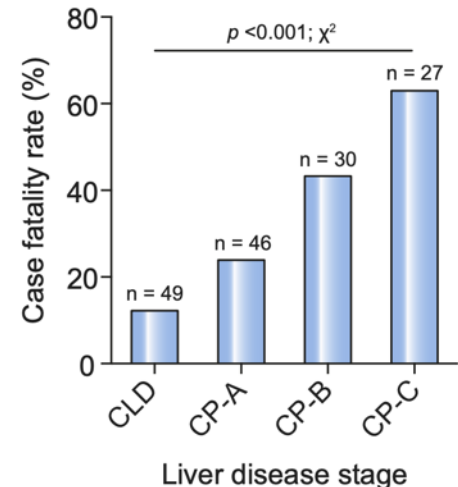
- OpenSAFELY study: Large cohort study of EHR data from >17 million pts in the UK (>100,000 with chronic liver disease)
- Chronic liver disease was a risk factor for in-hospital death from COVID-19 (HR 1.61, 95% CI 1.33-1.95)

Chronic Liver Disease and Cirrhosis

- Large US study of 2780 patients with COVID-19
- Chronic liver disease was associated with significantly higher mortality (RR 2.8, 95% CI 1.9-4.0)
- Mortality risk was higher in patients with cirrhosis (RR 4.6, 95% CI 2.6-8.3)
- NAFLD/NASH were the most common etiologies
- Mortality risk was independent of BMI, hypertension and diabetes

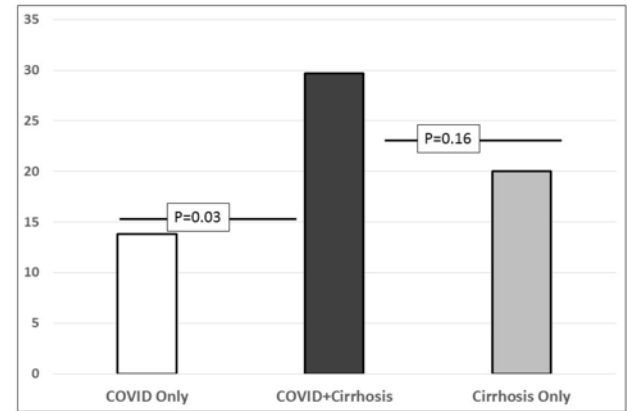
Chronic Liver Disease and Cirrhosis

- International registry data of 152 pts with COVID-19 and chronic liver disease
- Mortality strongly correlated with CTP class
- Hepatic decompensation during COVID-19 strongly associated with risk of death: 63% vs 26% without decompensation
- 24% with hepatic decompensation had no respiratory symptoms at time of COVID-19 diagnosis



Chronic Liver Disease and Cirrhosis

- Multicenter study of inpatients with cirrhosis + COVID-19 compared with age/gender-matched patients with COVID-19 alone and cirrhosis alone
- Cirrhosis + COVID-19 had higher risk of death (30%) compared to COVID-19 alone (13%), but not significantly higher than patients with cirrhosis alone (20%)
- Groups differed in reasons for admission, complications



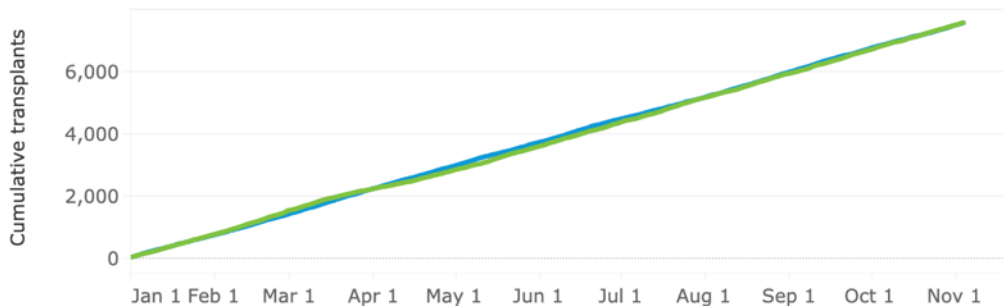
Chronic Liver Disease and Cirrhosis

- Host immune response may be the main driver for pulmonary injury due to COVID-19
- Immunosuppression might be protective
- Several studies show mortality benefit w/corticosteroids for treatment of critically ill patients w/COVID-19
- Reducing or stopping immunosuppressants may cause a flare of autoimmune hepatitis; may be harmful
- NIH: Do not discontinue oral corticosteroid therapy

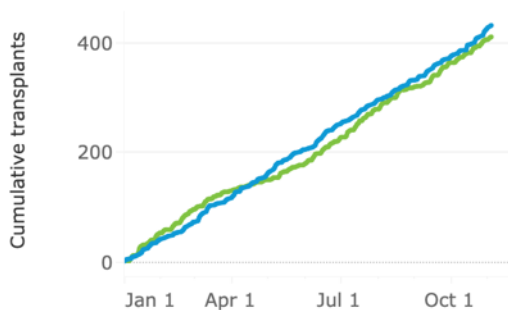
Liver Transplantation

2020 2019

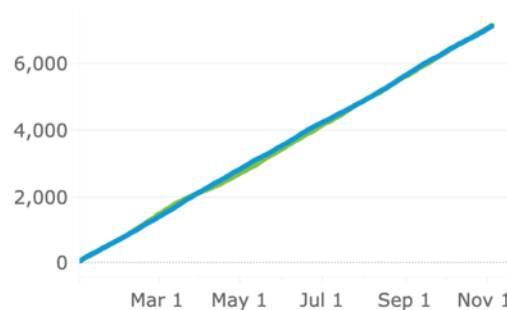
Year-to-date transplants



Living donor liver transplants



Deceased donor liver transplants



Liver Transplantation

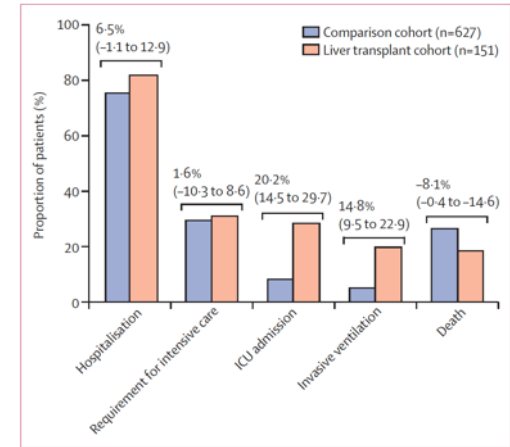
Liver transplant recipients are not at increased risk of severe COVID-19 or death from COVID-19

Liver Transplantation

- Prospective study of 111 liver transplant recipients with COVID-19 from Spain
- Increased risk of acquiring SARS-CoV-2
 - Almost double the rate in the age/gender matched general population
- Lower mortality rates than the matched general population

Liver Transplantation

- International registry data of 151 liver transplant recipients with COVID-19
 - Liver transplant status did not significantly increase the risk of death in patients with COVID-19 in a propensity score matched analysis
- US multicenter COLD consortium of 112 liver transplant recipients
 - Risk of death was not higher among liver transplant recipients compared to controls with chronic liver disease



Summary

- Elevated liver biochemistries are common in hospitalized patients with COVID-19 and causes are multifactorial
- Do not assume elevated liver biochemistries are b/c of COVID-19
- CLD and cirrhosis are risk factors for death from COVID-19
- Mortality correlates with CTP class and hepatic decompensation
- Risk of death from COVID-19 + cirrhosis is similar to risk of death from cirrhosis alone
- Liver transplant recipients are not at increased risk of death from COVID-19
- Corticosteroids are protective in critically ill COVID-19 patients

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<https://www.aasld.org/covid19>