

# Liver and COVID-19

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# Issues to discuss

Impact of COVID-19 on Liver

Causes of Liver involvement in COVID-19

Are Liver patients a vulnerable group?

Frequency of Liver involvement

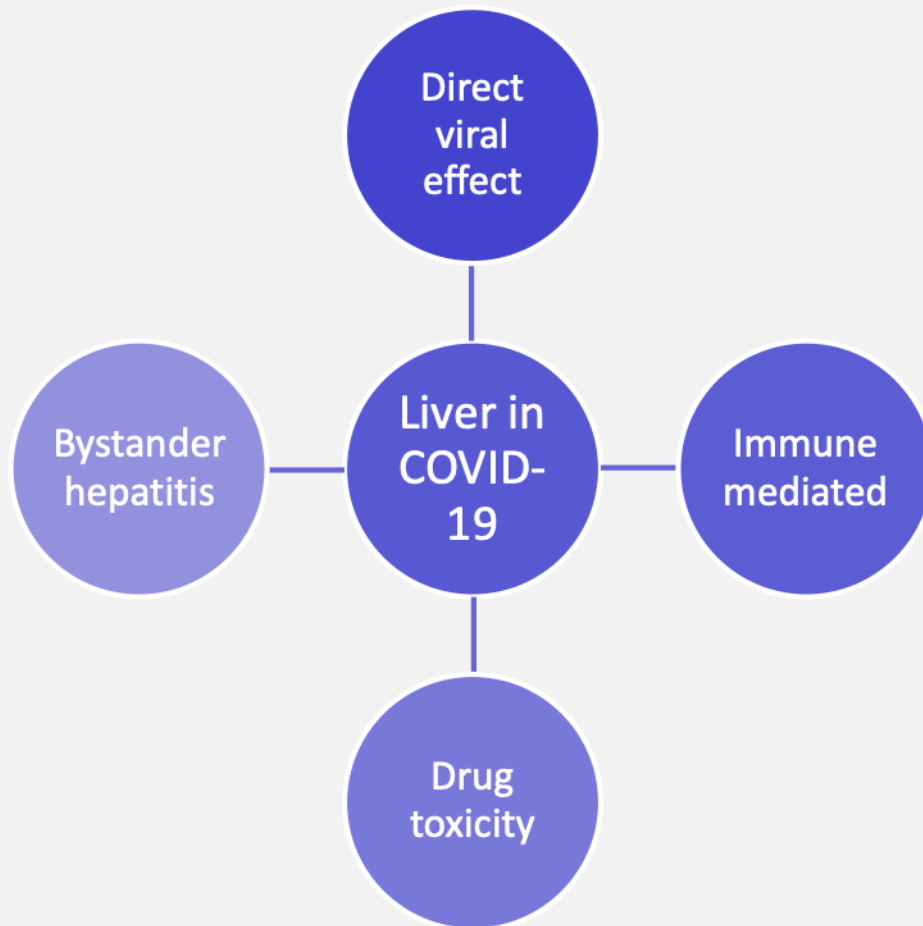
Relation between Liver involvement and severity of COVID-19

Care of CLD patients during this pandemic

COVID-19 drugs and considerations in liver disease

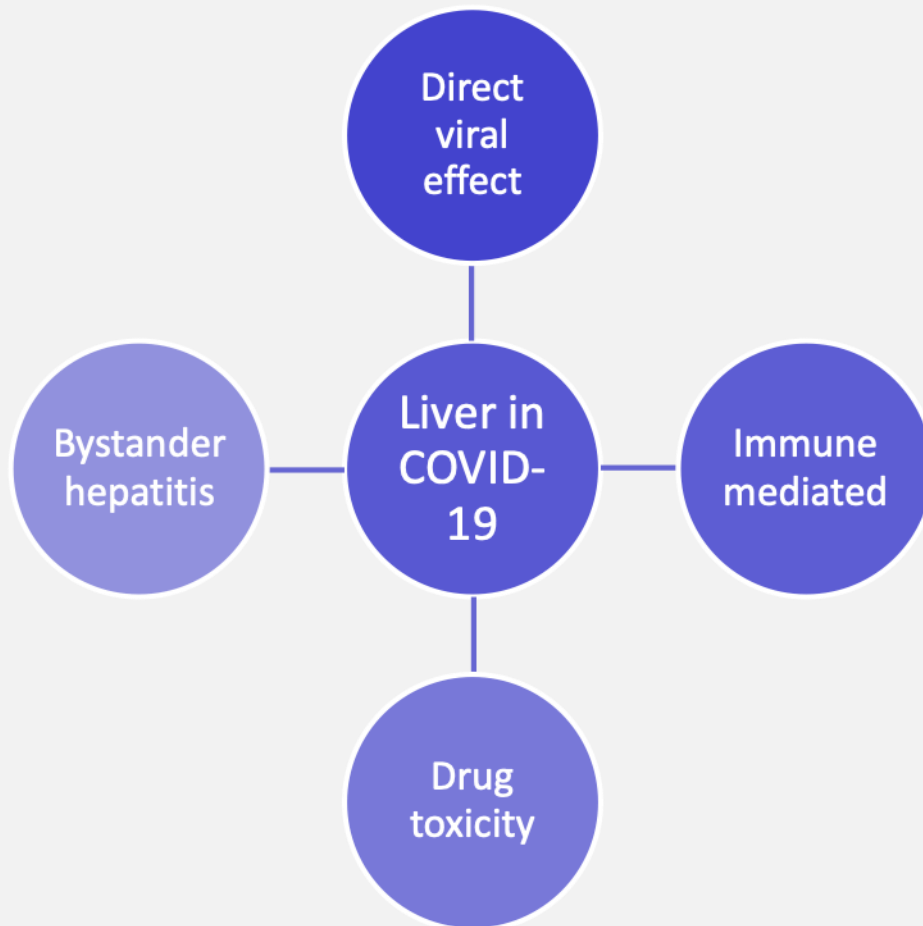
Liver transplantation

# COVID-19 and Liver



Chao Zhang, Lei Shi, Fu-Sheng Wang. Lancet. Gastroenterology & Hepatology. 2020 Mar 4; Liver injury in COVID-19: management and Challenges.

# COVID-19 and Liver



- COVID-19 may directly infect liver cells
- Receptor of the virus, ACE2 receptor, has been shown to be expressed on cholangiocytes

Chao Zhang, Lei Shi, Fu-Sheng Wang. Lancet. Gastroenterology & Hepatology. 2020 Mar 4; Liver injury in COVID-19: management and Challenges.

# Are Liver patients a vulnerable group?

- Insufficient information
- However, patients with advanced liver disease and those after liver transplantation represent vulnerable patient cohorts with an increased risk of infection and/or a severe course of COVID-19.

Boettler T, Newsome PN, Mondelli MU, et al. Care of patients with liver disease during the COVID-19 pandemic: EASL-ESCMID position paper, JHEP Reports (2020)

# Liver Abnormalities in COVID-19

- Varying degrees of liver test abnormalities have been described
- Liver comorbidities seen in 2-11% of patients with COVID-19
- AST and ALT abnormalities seen in 14%-53% of cases
- No cases of acute liver failure have been reported

Liver dysfunction is seen more in patients with severe COVID-19 infection than with milder disease.

Guan WJ, et al. N Engl J Med. 2020 Feb 28.

Chao Zhang, Lei Shi, Fu-Sheng Wang. Lancet. Gastroenterology & Hepatology. 2020 Mar 4; Liver injury in COVID-19: management and Challenges.

# Liver Abnormalities in COVID-19

- Difficult to separate the independent effect of viral infection from various treatment modalities
- No data that COVID-19 can present as ALF or precipitate ACLF

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# Care of CLD patients in this Pandemic

- Outpatient care: Encourage tele-consultation
- Compensated CLD- manage as per standard protocol
- Chronic viral hepatitis- does not appear to impact COVID-19 severity
- NASH- metabolic abnormalities such as Diabetes, Hypertension may put them at increased risk of severe infection
- Decompensated CLD- manage various complications as per standard protocol with precautions
- Liver Transplantation



# COVID-19 Drugs & Considerations in Liver disease

Drug	Mechanism of Action	Consideration in Liver Disease
Remdesivir	Viral RNA polymerase Inhibitor	<ul style="list-style-type: none"> <li>No experience in liver cirrhosis</li> <li>Liver toxicity (raised ALT) possible</li> </ul>
Chloroquine/ HCQS ± azithromycin	Interference receptor ACE2	<ul style="list-style-type: none"> <li>Exclude G6PD deficiency before</li> <li>Drug-interactions with immunosuppressive drugs: cyclosporine, tacrolimus, sirolimus, everolimus</li> <li>HCQS is an extremely rare cause of acute liver injury (Liver Tox)</li> </ul>
Lopinavir/ritonavir	Experience in patients with SARS	<ul style="list-style-type: none"> <li>mTOR inhibitors should not be co-administered</li> <li>Close monitoring of drug level are required for calcineurin-inhibitors</li> </ul>
Tocilizumab	Humanised mAb targeting IL-6	<ul style="list-style-type: none"> <li>ALT elevations are frequent</li> <li>Patients with decompensated CLD should not be treated</li> <li>Consider risk of HBV reactivation</li> </ul>

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