



Major Updates to COVID-19 Expert Panel Consensus Statement

6/25/2020

- Additional changes reflecting the ramping up of routine and in-person clinical care, procedures, and clinical research
- A retrospective Italian study showing a high mortality rate (35%) in hospitalized patients with cirrhosis and COVID-19
- Inpatient mortality in patients with cirrhosis and COVID-19 may be similar to the mortality of patients with cirrhosis alone without COVID-19
- Another retrospective Italian report of 10 patients with autoimmune hepatitis on immunosuppression and with COVID-19 that suggests the course of COVID-19 may be similar to non-immunosuppressed patients
- Single-center and registry data of liver transplant recipients with COVID-19 suggesting that mortality may be associated with comorbidities and not to immunosuppression
- Results of the RECOVERY trial that demonstrated a significant mortality benefit from dexamethasone in patients receiving invasive mechanical ventilation or oxygen without invasive mechanical ventilation
- The FDA revoked the Emergency Use Authorization for chloroquine and hydroxychloroquine after determining they are unlikely to be effective in treating COVID-19
- Clearly identified preprint articles that have not been peer-reviewed

6/4/2020

- Data from two international registries showing that patients with chronic liver disease have a high mortality rate and mortality is associated with liver disease severity
- Revised recommendations for management of immunosuppression in patients with COVID-19
- Revised Procedures section to address reopening endoscopy centers to elective/non-urgent cases

5/14/2020

- Acknowledgement of possible link between COVID-19 and Kawasaki-like pediatric multisystem inflammatory syndrome
- Italian autopsy series describing involvement of hepatic vasculature including acute portal and sinusoidal thrombosis
- Introduction of SARS-CoV-2 antigen testing in addition to increasing availability of antibody testing
- OpenSAFELY study from the UK showing chronic liver disease is a risk factor for in-hospital death from COVID-19
- Large US study also showed that chronic liver disease and cirrhosis are associated with higher COVID-19 mortality

- Clarification that treatment of hepatitis B is not contraindicated in patients with or without COVID-19
- Recommendations regarding use of masks for patients and caregivers as well as providers in the clinic or hospital setting
- Evolving data on hydroxychloroquine suggesting it should no longer be used outside RCTs
- New data on triple therapy with lopinavir-ritonavir, ribavirin and interferon-beta-1b showing more rapid viral clearance compared to lopinavir-ritonavir (phase 2 RCT)
- Expanded section on reentry

5/4/2020

- Changed the title to match the *Hepatology* manuscript
- Edited the Overview and Rationale to acknowledge that the US is reaching the peak or past the peak in many communities
- Added to data on serological testing
- Briefly described a recent publication from the *American Journal of Transplantation* about 90 solid organ transplant recipients with COVID-19
- Included recommendations from the recent NIH COVID-19 Treatment Guidelines
- Discussed recently released results of trials and the FDA's Emergency Use Authorization of remdesivir
- Added a new section titled "Reentry and Return to a Pre-Pandemic State" – this section will be further developed in future updates

4/16/2020

- Emerging data suggest that patients with NAFLD may be at higher risk for COVID-19
- Patients with chronic liver disease and transplant recipients are potentially at increased risk for severe COVID-19 until further data become available
- Consider etiologies unrelated to COVID-19, including other viruses such as hepatitis A, B, and C when assessing patients with COVID-19 and elevated liver biochemistries
 - Updated Figure 1
- Proceed with treatment of hepatitis B and C in patients *without* COVID-19 as clinically warranted
- Initiating treatment of hepatitis B in a patient *with* COVID-19 is not routinely warranted but should be considered if there is clinical suspicion of a hepatitis B flare or when initiating immunosuppressive therapy
- Initiating treatment of hepatitis C in a patient *with* COVID-19 is not routinely warranted
- Consider the following issues in hospitals with a high prevalence of COVID-19:
 - The risk of nosocomial transmission during the transplant admission
 - Difficulty obtaining procedures or other resources when complications arise
 - Limitations on family/caregiver visitation for a postoperative period that often relies on the engagement of caregivers
- Due to cancellations of elective/non-urgent endoscopy:
 - Consider, in the interim, primary prophylaxis with beta blocker therapy for patients with clinically significant portal hypertension or high risk of decompensation
- Data suggest that a surgical mask worn by infected individuals may reduce the risk of transmission (source control)

- All healthcare workers should wear a surgical mask in patient care settings

4/7/2020

- New sections
 - Diagnosis of SARS-CoV-2 Infection
 - COVID-19 Liver Disease/Transplant Registries
- New tables
 - Diagnostic Methods for SARS-CoV-2 Detection
 - Investigational Treatments for COVID-19
- New figures
 - Approach to the Patient with COVID-19 and Elevated Serum Liver Biochemistries
 - Approach to Liver Transplant Organ Offers
 - Approach to the Liver Transplant Recipient with COVID-19
- Expanded “What We Know” sections
- Added virology of SARS-CoV-2
- Added liver histology in COVID-19
- Expanded COVID-19 symptoms for screening: sore throat, diarrhea, new loss of sense of taste or smell
- Expanded complications of COVID-19 complications when evaluating patients with elevated liver tests: myositis, cytokine release syndrome, ischemia/hypotension, DILI
- Clarified recommendations for treatment of patients with liver disease
 - Recommend continue treatment for hepatitis B or C
 - Consider delaying initiation of hepatitis C treatment
 - Removed specific prednisone 10 mg recommendation to avoid confusion when tapering high-dose prednisone in patients with COVID-19
 - Recommend initiating immunosuppressive therapy in patients with liver disease with or without COVID-19 who have strong indications for treatment (e.g., autoimmune hepatitis, graft rejection)
- Clarified recommendations for monitoring patients with HCC and surveillance of patients at risk for HCC
- Expanded section on Medication Management of Patients with COVID-19 to include new information about investigational agents
- Revised PPE recommendations for endoscopic procedures to include N95 masks