COVID-19 AND LIVER INJURY

Dr. Rajeev Khanna,
Associate Professor (Pediatric Hepatology),
Institute of Liver & Biliary Sciences,
New Delhi
Email : drrajeev_khanna@rediffmail.com

Qi X, Liu C, Jiang Z, Gu Y, Zhang G, Shao C, et al. Multicenter analysis of clinical characteristics and outcome of COVID-19 patients with liver injury. J Hepatol. 2020 Apr 16. pii: S0168-8278(20)30222-1. doi: 10.1016/j.jhep.2020.04.010.

This was a multicenter cohort (COVID-LIVER-CHESS) of 70 patients from 9 designated hospitals in China, patients with laboratory-confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and without pre-existing liver-related comorbidities. COVID-19 was non-severe in 67(95.71%) and severe in 3 (4.29%) patients on admission. Thirty-two (45.71%) patients with COVID-19 were classified with liver injury on admission [elevated ALT in 15 (21.43%), 42.00-72.70 U/L; elevated AST in 5 (7.14%), 42.90-61.00 U/L; and elevated total bilirubin in 25 (35.71%), 18.00-148.00 μmol/L). Of 32 patients with liver injury, the median age were 41 years (IQR 27.5-50.0 years) and 23 (71.88%) were male. Eight (25.00%) patients had comorbidities, including 6 (18.75%) hypertension, and 2 (6.25%) malignancy. Patients with liver injury had a longer time from onset to admission in contrast to those without liver injury (8 days vs 5 days, p=0.037). However, the length of ICU stay was comparable in those with or without liver injury.

Zhang C, Shi L, Wang FS. Liver injury in COVID-19: management and challenges. Lancet Gastroenterol Hepatol. 2020 May;5(5):428-430. doi:10.1016/S2468-1253(20)30057-1.

In this review, authors summarized the results of 8 studies (including their own data). Pre-existing liver disease was present in 2-11% of patients with COVID-19. Abnormal liver functions were seen in 16.1-53.1% of patients. Elevation of AST/ALT was more often seen in those with pre-existing liver disease (18-20% vs 28-39%) and in those requiring ICU stay (62% vs 25%). However, one study mentioned no difference in the incidences of abnormal liver functions in survivors versus non-survivors (30% vs 28%).

How to deal with cirrhotic patients in the COVID-19 era?

Tapper EB, Asrani SK. COVID-19 pandemic will have a long-lasting impact on the quality of cirrhosis care. J Hepatol. 2020 Apr 13. Review. pii: S0168-8278(20)30217-8. doi:10.1016/j.jhep.2020.04.005.

In this review article, authors described that COVID-19 will dramatically impact the care of cirrhotics which will unfold into 3 waves: i) an intense period with prioritized high-acuity care with delayed elective procedures and routine care during physical distancing, ii) a challenging 'return to normal' following the end of physical distancing, with increased emergent decompensations, morbidity, and systems of care overwhelmed by the backlog of deferred care, and iii) a protracted period of suboptimal outcomes characterized by missed diagnoses, progressive disease and loss to follow-up. Authors also suggested need of concrete steps to preserve the quality of care provided to cirrhotics which may include intensification of the preventative care provided to compensated cirrhotics, proactive chronic disease management, robust telehealth programs, and a reorganization of care delivery to provide a full service of care with flexible clinical staffing.

Fix OK, Hameed B, Fontana RJ, Kwok RM, McGuire BM, Mulligan DC, et al. Clinical Best Practice Advice for Hepatology and Liver Transplant Providers During the COVID-19 Pandemic: AASLD Expert Panel Consensus Statement. Hepatology. 2020 Apr 16. doi: 10.1002/hep.31281.

Boettler T, Newsome PN, Mondelli MU, Maticic M, Cordero E, Cornberg M, et al. Care of patients with liver disease during the COVID-19 pandemic: EASL-ESCMID position paper. JHEP Rep. 2020 Jun;2(3):100113. doi:10.1016/j.jhepr.2020.100113. Epub 2020 Apr 2. Review.

In these two Position statements – first by the American association for study of Liver (AASLD) expert panel and second jointly by the European association for study of Liver (EASL) and European Society of Clinical Microbiology and Infectious Diseases (ESCMID), authors mentioned that due of shortage of appropriate studies, it is unclear whether chronic liver diseases should be considered as risk factors for severe COVID infection. Elevated ALT, reduced albumin and reduced platelets are risk factors of high mortality. Thus, theoretically, patients with advanced liver disease are at high risk. Coexisting hepatitis viruses, antiviral drugs for COVID-19 and cytokine storm related to macrophage activation syndrome compound the picture. Additionally, there is risk of decompensation or development of acute-on-chronic liver failure (ACLF). Lastly, there is concern of immunosuppression on course of COVID-19 in patients with autoimmune hepatitis or after liver transplantation. Authors recommended prioritisation approach for patients with liver disease: *(i) Patients with comnpensated cirrhosis:* To avoid visits to specialized centres. Delay ultrasound surveillance for hepatocellular carcinoma and screening for varices *(ii) Patients with viral hepatitis:* No increased risk of severe COVID-19, but avoid visits. *(iii) Patients with NAFLD:* NAFLD patients have associated comorbidities (diabetes, hypertension, obesity) and hence at increased risk. *(iv) Patients with autoimmune liver disease:* Avoid reducing immunosuppression. Vaccination against streptococcus pneumonia and influenza. For COVID-19 positive and need to reduce immunosuppression, maintain prednisolone dosage of at least 10 mg/day to avoid adrenal insufficiency. *(v) Patients with decompensated cirrhosis:* Minimal exposure to medical staff. Listing for liver transplantation only for those with poor short term prognosis. Testing for COVID-19 in those presenting with acute decompensation or ACLF. *(vi) Patients actively listed for Liver transplantation:* SARS-COV-2 should be routinely tested. Consent for potential risk of nosocomial COVID-19. Living donor liver transplantation should be considered on a case-by-case basis. *(vii) Patients after liver transplantation:* Minimal exposure to medical staff. Emphasis on vaccination. Avoid reducing immunosuppression. *(viii) Endoscopy for variceal screening*: Should be limited to those presented with variceal bleeding or at high risk of variceal bleeding i.e. prior history of variceal bleeding, signs of significant portal hypertension (ascites, platelets <100,000/mm3). Non-invasive risk assessment for presence of varices should be applied for stratification as per Baveno VI. *(ix) Liver biopsy*: Can be deferred in patients with non-alcoholic fatty liver disease or mild elevation of transaminases (ALT <3 times upper limit of normal), but should be performed with marked ALT elevation (>5 times upper limit of normal) of unknown etiology or in patients with liver mass suspicious of malignancy. Treatment of autoimmune liver disease can be considered without histology on an individual basis considering risk versus benefit. *(x) Children with liver disease:* All children with elevated AST/ALT should be routinely evaluated for underlying liver diseases and coexisting infections as COVID-19 is not commonly associated with liver dysfunction in children.