

Acute liver injury in COVID-19: Risk factors in a large pediatric cohort

[Perez, A.](#); [Cantor, A.](#); [Miller, J.](#); [Kogan-Liberman, D.](#); [Rudolph, B.](#); [Margolis, K. G.](#); [Gao, Q.](#); [DaSilva, B.](#); [Martinez, M.](#); [Ovchinsky, N.](#)
Hepatology; 72(1 SUPPL):258A-259A, 2020.

Article in English | EMBASE | ID: covidwho-986127

ABSTRACT

Background:

Coronavirus disease 2019 (COVID-19) is associated with acute liver injury in adults, but liver injury has not been well characterized in pediatric patients We aim to describe the prevalence of liver injury in children in the setting of acute severe respiratory syndrome-coronavirus 2 (SARSCoV- 2) infection and to identify risk factors for the development of COVID-19-associated liver disease

Methods:

This is a retrospective cohort analysis of all patients ≤ 21 years of age with an acute SARS-CoV-2 infection and positive real-time reverse transcription polymerase chain reaction presenting between March 14th to June 30th, 2020 to two tertiary children's hospitals in New York City Institutional Review Board approval was obtained at both institutions Patients without aminotransferase testing or those with multisystem inflammatory syndrome in children were excluded from analysis Acute liver injury was categorized as mild if alanine aminotransferase (ALT) was above the upper limit of normal (ULN) (>30 U/L) and severe if ALT was more than five times ULN

Results:

A total of 225 patients were evaluated The mean age was 11 years (standard deviation ± 7 years);61% were male, 55% were of Hispanic/Latinx ethnicity, and 21% were black. Obesity was identified in 35% of children;7% had pre-existing liver disease The majority (74%) of patients were hospitalized, while 23% of patients required intensive care unit (ICU) admission and 8% developed multi-organ failure (MOF) Two percent of patients (5/225) died 45% of patients developed acute liver injury (median 67 U/L, [IQR 45-160] U/L), and severe liver injury (median 271 [IQR 193- 389] U/L) was noted in 12% of all children The presence of gastrointestinal symptoms was reported in 54% of patients Factors associated with acute liver injury in univariate analysis included age ($p = 0.015$), obesity ($p = 0.0001$), pre-existing liver disease ($p = 0.005$), elevated inflammatory markers such as ferritin ($p < 0.0001$), C-reactive protein (CRP) ($p < 0.0001$), d-dimer ($p = 0.002$), as well as MOF ($p = 0.0009$) and ICU admission ($p = 0.026$) In multivariate regression model, acute liver injury was significantly associated with older age (OR 1.18; $p = 0.01$), CRP (OR 1.07; $p = 0.01$) and ICU admission (OR 8.9, $p = 0.02$) Clinical and laboratory characteristics are listed in the Table 1

Conclusion:

Acute liver injury is common in children with SARS-CoV-2 infection but is most often mild Patients who are older and those with higher disease severity may be at risk for more significant liver injury.(Table Presented).