

corner point. It was decided to apply Regression Analysis, Algebra, Analytic Geometry and Differential Calculus to determine the cutoff point. MINITAB software was used for computations.

Results: Regression allowed two different ways to reach the same conclusion: CFF's cutoff point is 38.0 Hz to identify patients with MHE. CFF test is a promising tool but to be of help, it needs a valid cutoff point in the scale.

Financing: Project supported by the SS / IMSS / ISSSTE-CONACYT Sector Research Fund on Health and Social Security. 1-2017. 289979.

Project supported by the Budgetary Program E015 Research and Technological Development in Health of the ISSSTE.

Conflicts of interest: The authors have no conflicts of interest to declare.

<https://doi.org/10.1016/j.aohep.2020.08.043>

43

Impact of liver enzymes on SARSCoV-2 infection and on the severity of clinical disease



A. Servín-Caamaño, D. Reyes-Herrera,
A. Flores-López, E.J.A. Robiou-Vivero,
F. Martínez-Rivera, V. Galindo-Hernández,
C. Casillas-Suárez, O. Chapa-Azueta,
A. Chávez-Morales, V.H. Rosales-Salyano,
B. Jiménez-Bobadilla, M.L. Hernández-Medel,
B. Orozco-Zúñiga, J.R. Zacarías-Ezzat,
S. Camacho-Hernández, J.L. Pérez-Hernández,
F. Higuera de la Tijera

Hospital General de México "Dr. Eduardo Liceaga",
México

Background and aim: SARSCov-2 infection, currently responsible virus for the pandemic, can have a multi-organic impact, recent studies show that liver injury could be a manifestation of the disease, and liver disease could also be related to a worst prognosis. AIM: To compare the characteristics of patients with severe COVID-19 due to SARSCov-2 disease requiring intubation versus stable patients.

Methods. Type of study: Observational, a case-control, nested in a cohort study. Procedure: Complete medical records of patients admitted for COVID-19 at a third level center were reviewed. Clinical and biochemical data were collected and then characteristics between seriously ill patients who required intubation were compared versus stable patients without mechanical ventilation.

Results: We included 166 patients with COVID-19 due to SARSCov-2 infection, 114(68.7%) were men, mean age was 50.6 ± 13.3 years old, 27(16.3%) were assessed as seriously ill patients requiring intubation for SARS. The comparative analysis between those who required intubation versus those who remained without requiring intubation showed significant elevation of ALT, AST, LDH and D-dimer, also older age, see [Table](#).

Conclusions: This is the first study in a Mexican cohort, which demonstrate that

seriously ill patients have significant raises of liver enzymes (AST, ALT) with prognostic implications in the SARSCov-2 disease course.

Conflicts of interest: The authors have no conflicts of interest to declare.

<https://doi.org/10.1016/j.aohep.2020.08.044>

Table

which compares characteristics between patients who developed SARS and required intubation, versus those with COVID-19 pneumonia without severity criteria for intubation.

Variable	SARS requiring intubation n = 27	COVID-19 pneumonia without severity criteria and without mechanical ventilation n = 139	P (*<0.01)
Male gender, n(%)	20 (74.1)	94 (67.6)	0.51
Albumin, g/dL	3.27 ± 0.52	3.48 ± 0.50	0.09
ALT, UI/L	225.4 ± 341.2	41.3 ± 41.1	0.003*
AST, UI/L	325.3 ± 382.4	52.8 ± 47.1	0.001*
Alkaline Phosphatase, UI/L	109.1 ± 74.8	96.8 ± 54.4	0.39
GGT, UI/L	205.6 ± 360.4	125.4 ± 163.3	0.35
Age, years-old	58.6 ± 12.7	49.1 ± 12.8	0.001*
Glucose, mg/dL	168.2 ± 95.0	149.8 ± 97.8	0.54
Urea, mg/dL	54.7 ± 37.0	42.1 ± 37.7	0.14
Creatinine, mg/dL	1.1 ± 0.7	0.9 ± 0.7	0.29
Cholesterol, mg/dL	102.9 ± 33.8	123.0 ± 27.0	0.03
Triglycerids, mg/dL	142.4 ± 45.8	145.7 ± 49.4	0.83
Direct Bilirubin, mg/dL	0.8 ± 1.7	0.3 ± 0.3	0.23
Indirect Bilirubin, mg/dL	0.8 ± 1.1	0.5 ± 0.3	0.31
Total proteins, g/dL	6.5 ± 0.7	6.3 ± 1.0	0.60
LDH, UI/L	764.6 ± 401.9	461.0 ± 185.6	0.001*
Sodium, mEq/L	128.8 ± ± 26.8	135.8 ± 3.5	0.38
Potassium, mEq/L	4.2 ± 0.4	4.0 ± 0.5	0.19
Chlorine, mEq/L	102.2 ± 5.04	100.6 ± 4.35	0.25
Calcium, mg/dL	7.8 ± 0.47	8.0 ± 0.44	0.77
Phosphorus, mg/dL	3.2 ± 1.0	3.1 ± 0.8	0.75
Magnesium, mg/dL	2.3 ± 0.3	2.2 ± 0.4	0.27
Leukocytes, cel/mm ³	10.3 ± 5.1	8.7 ± 4.5	0.23
Neutrophils, cel/mm ³	8.9 ± 4.6	7.1 ± 4.2	0.09
Lymphocytes, cel/mm ³	1.0 ± 0.4	1.0 ± 0.6	0.99
Hemoglobin, g/dL	14.7 ± 1.7	14.5 ± 2.3	0.82
Red cells Wide Distribution	14.8 ± 1.4	14.2 ± 1.4	0.15
Platelets, cel/mcL	219.7 ± 73.1	226.4 ± 86.2	0.77
Mean Platelet Volume, fL	8.9 ± 0.9	8.4 ± 0.9	0.11
Fibrinógeno, mg/dL	640.7 ± 207.5	608.6 ± 168.9	0.54
D Dimer, ng/mL	7765 ± 9109	1871 ± 4146	0.003*
Reactive C Protein, mg/L	210.3 ± 157.4	142.7 ± 121.2	0.17
Ferritin, ng/mL	782 ± 518	786 ± 1011	0.98
CPK, UI/L	169 ± 188	300 ± 462	0.36
CPK-MB, ng/dL	34 ± 42	25 ± 17	0.29
Troponine I, ng/L	49.4 ± 136.7	26.1 ± 96.3	0.45
Miogloblin, ng/mL	151 ± 151	110 ± 192	0.47
Brain Natriuretic Peptid, pg/mL	56.9 ± 80.5	136.1 ± 342.2	0.49