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EVALUATING SERUM BIOMARKERS LIVERFAST SURROGATES OF LIVER FIBROSIS AND STEATOSIS COULD IDENTIFY RISKS IN A CLINICAL POPULATION EXPERIENCING SARS-COV2 INFECTION (COVID).

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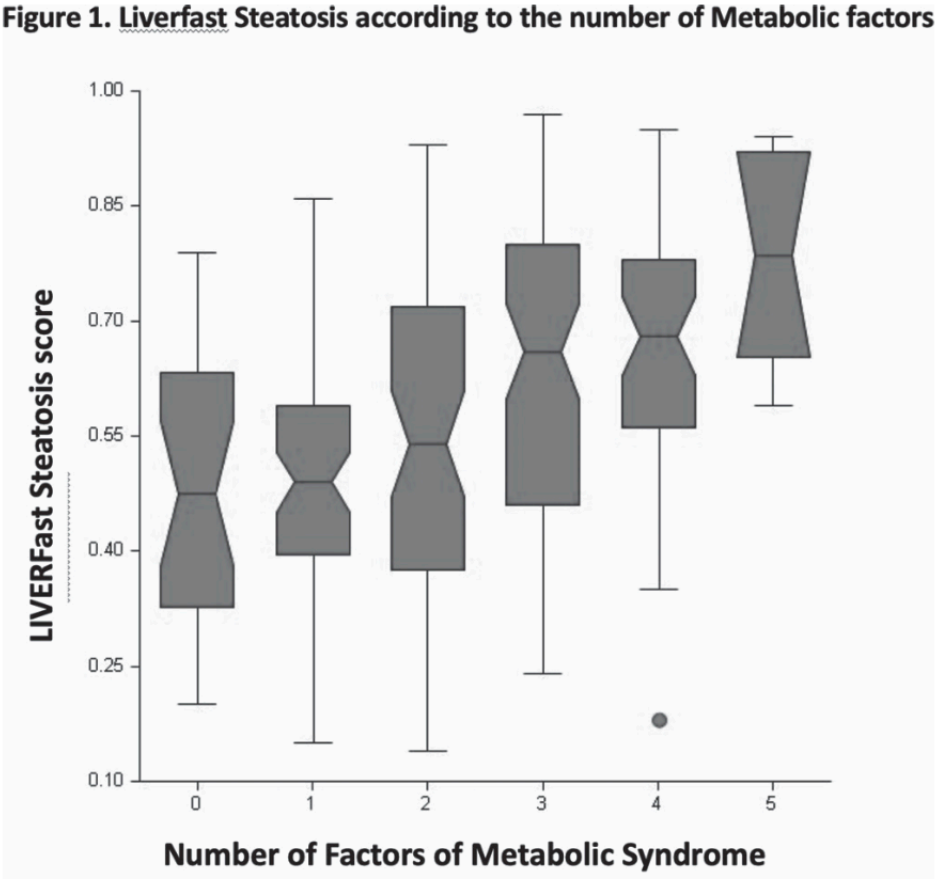
Background: Coronavirus disease-2019 (COVID) is a life-threatening infection caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) virus. Age, diabetes and metabolic factors has rapidly emerged as major comorbidities for COVID severity. However, the phenotypic characteristics of patients (pts) in COVID are unknown. For clinicians, it's imperative to predict the outcome of a given patient following a positive test for SARS-CoV2. LIVERFASt™ (LF) and LF-Select (LF-S) are proprietary algorithm assessing liver fibrosis (LF-Fib), steatosis (LF-Ste) or its risk (LF-S) computed with 5 to 10 serum biomarkers. **Aim:** We approach this problem from a new angle: by directly evaluating blood serum markers LF-Fib for fibrosis and LF-Ste steatosis, prospectively collected from 10,623 patients, we examined whether there exist any notable differences between those who would eventually contract COVID, and those who have not yet contracted the disease. **Methods:** Health Catalyst's extended de-identified real-world database, Touchstone, which includes electronic medical record and claims data from 17 multi-payor and geographically diverse healthcare systems (HCS), was used to identify (10,623) from primary, secondary and tertiary settings before and during the COVID pandemic. Patients were selected with available LF and LF Select two surrogate markers for fibrosis and steatosis risk evaluation. Patients that tested positive for COVID were matched based on the main characteristics including age and gender with those that

tested COVID negative. **Results:** We focused on 276 patients COVID(-) or (+) having all biomarkers to compute LF-Fib and LF-Ste, mean age 59.6yrs, 49% males, 38.4% having history of cardiovascular disease, 68.4% having 2 or more metabolic syndrome factors. A strong correlation was observed between LF-Ste and the number of metabolic factors (Spearman correlation coefficient 0.39 , $p<0.001$). (Figure 1) with a linear increase of LF-Ste score with the increase in number of metabolic factors. 9/276 pts COVID(+) were matched with 66/276 COVID(-) pts. 77% pts with COVID(+) had more than one cardiovascular complication and 67% had at least one metabolic factor. Median (95%CI) estimated liver fibrosis in COVID(+) pts was significantly higher than in matched pts without COVID as per surrogate marker of fibrosis A2M [3.30g/l(2.56-3.78) vs 2.40 g/l(2.07-2.74), p=0.04] and LF-Fib [0.60(.45-.77) vs 0.39(.32-.59) p=0.05]. COVID-19(+) pts had higher triglycerides levels [2.34(1.33-2.78) vs 1.02 (.97-1.27), $p<0.001$]. 10,028 COVID(-) and 319 COVID(+) more pts with LF-S to detect steatosis risk were identified that will make the object of further analyses for the outcomes. **Conclusion:** Liverfast Steatosis and Fibrosis scores are noninvasive tests that could be used to screen populations at risk of metabolic syndrome and liver disease to identify those at risk of COVID-19.

Figure 1. Liverfast Steatosis according to the number of Metabolic factors



Cite

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