

Low (HDL) Lipoprotein Levels is Strongly Correlated with The Severity of Covid -19 Pneumonia

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1. Case Report

Mortality rates of COVID-19 continue to rise across the world. The majority of patients dies from Adult Respiratory Distress Syndrome (ARDS), pulmonary embolism and from cytokine storm syndrome. We describe the case of 52 years old women, with ARDS and Cytokines Storm Syndrome (CSS) who survived. Biomarkers of inflammation including D-dimer 4000 ng/mL, CRP 200 mg/dL, IL-6: 69 mg/ml, Ferritin 1200 mg/dL. Fibrinogen 1000 mg/dL were elevated. She was treated with methylprednisolone 80 mg bid, vitamin d 1000 IU bid, and clexane (Enoxaparin) 80 bid SC and high flow oxygen therapy. After failure to improve Hypoxemia on prone position and aggravation of acute respiratory distress (tachypnea >30 RR/minutes, use of accessory muscles,), she was intubated and paralyzed

completely and transferred to the ICU with mechanical ventilation. Her PO2/FiO2 was 180. The 4C mortality score was 17 (very high). Subsequently enterococcus bacteremia was documented and treated with Meropenem. CTA showed pulmonary embolism in right lower lobe. During the first two weeks, HDL levels decreased significantly (range 32 to 15 IU). The turning point for recovery was on day 19 after admission when insulin resistance (TG/HDL) decreased significantly or when HDL level increases back to normal (Figure1A&B). This was followed by PCR negativity for Covid -19, extubation, use of face mask, room air respiration and finally discharged home. Clinical and biochemical markers of insulin resistance and HDL levels should be evaluated for their prognostic utility. Consideration should be given to assess therapeutic intervention to enhance insulin sensitivity and to regulate lipoprotein metabolism.

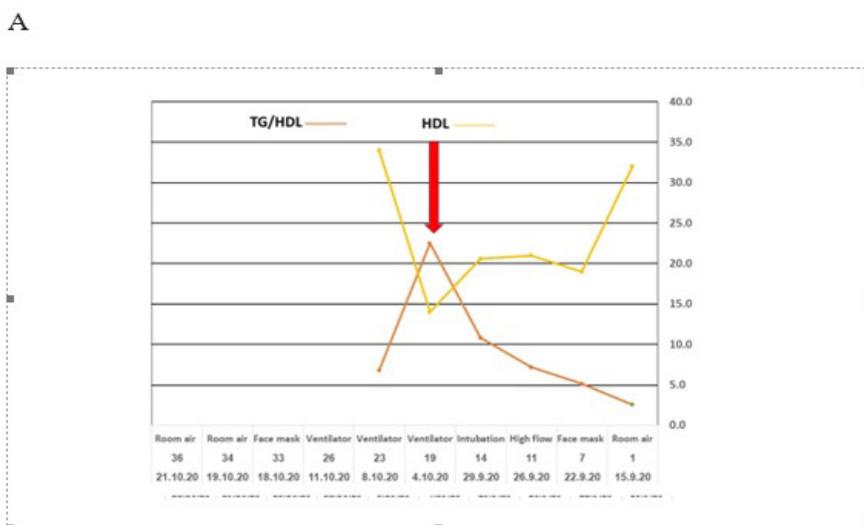


Figure 1A: Correlation between Insulin resistance and HDL levels and beginning of recovery from covid-19 pneumonia.

B

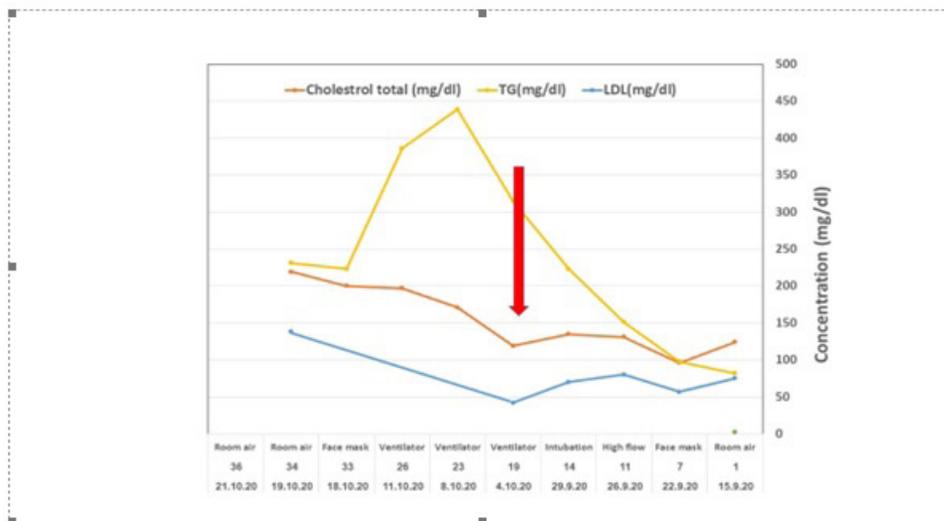


Figure 1B: Correlation between lipid levels and the prognosis of a patient with Covid-19 pneumonia. Red Arrow at Day 19 indicates the beginning of recovery (direction from right to left).