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Atherogenic Index in Plasma and COVID-19 prognostication: A single centre study.

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Introduction Atherogenic index in plasma (AIP) is a base 10 logarithmic expression of Triglycerides (TG): High-density lipoprotein cholesterol (HDL-C) ratio.

Objectives Study the effect of SARS-CoV-2 infection on the individual components of the lipid profile; Total Cholesterol (TC), HDL-C, Low Density Lipoprotein Cholesterol (LDL-C), TG, and AIP in adults (above 18 years) presenting with rt-PCR positive COVID 19.

Methodology A retrospective, case notes-based descriptive study of lipid profile in adult patients with COVID-19, positive for rt-PCR or RAT from July 2021 to October 2021 at the COVID treatment centre, Teaching Hospital Batticaloa, Sri Lanka.

The primary and secondary outcomes were the severity of the disease on admission and death respectively. Patients with dyslipidaemia or on statin treatment were excluded.

Results Among the 98 patients, 80 were included in the analysis (18 excluded due to dyslipidaemia), 38.2% were above 60 years and 82.5% were females. As per the standard WHO, lipid profile, suboptimal values were noted and as follows –TG 40/80 (50%); TC 20/80 (25%); HDL 54/80 (67.5%); LDL 40/80 (50%). A previous study validated a cut-off of AIP for Sri Lankans to be >0.312. In the present study, the proposed AIP was found to be above) >0.312 in 92.5% of patients. A significant AIP of >0.312 and severity on admission as follows; mild 20/22 (90.9%), moderate & severe 68/68 (100%). AIP >0.312 was related to all the deaths and to 91.78% recovery.

Conclusion The Atherogenic index was raised in COVID-19 patients and correlated with the severity and death compared to raw lipid profile values.