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Letter to the Editor: Statins and COVID-19: Efficacy Still to Be Proven

TO THE EDITOR:

We read with interest the article by Bloom et al.[1] reporting liver biochemistry–associated trends, etiologies, and outcomes in 60 patients with COVID-19. The authors reported that 69% of the patients had abnormal liver function tests (LFTs) on admission and 93% during their hospital stay, with an aspartate aminotransferase (AST) predominance. These results are similar to our own experience of 234 patients admitted with COVID-19 according to World Health Organization diagnostic guidelines.[2] In our study, 149 (63.7%) patients were male (mean age [SD], 67 [±14] years), 9 (3.8%) had chronic liver disease, and 64 (27.4%) had diabetes. On admission, 66.6% of patients had abnormal LFTs, with an AST predominance. Median AST on admission was also significantly higher than median alanine aminotransferase (ALT) (45 vs. 37 IU/L; $P < 0.005$). On admission, AST was correlated with ALT ($r = 0.7$; $P < 0.005$), confirming true hepatic, but not severe, COVID-19-related liver injury.[2]

Statins were proposed for their capacity to modulate immune response as in the retrospective study by Zhang et al., in which patients with statins had better survival and lower biologic inflammatory parameters compared to patients without statins.[3]

In our cohort, only 42 (18%) patients were on statins before admission, compared with 40% in Bloom et al.'s study. Likewise, AST levels were not significantly different between patients who were and were not prescribed statins before admission. Among 114 patients with severe disease on admission, 26 (23%) were taking statins. Statin prescription before admission did not affect COVID-19 severity ($P = 0.06$). We agree with Bloom et al. that statin-related drug-induced liver injury is uncommon but that caution should be taken when prescribing remdesivir with statins, because remdesivir interaction clinical trials have not been conducted.[4] Furthermore, remdesivir and statins are both cytochrome P450 3A4 (CYP3A4) substrates, which could favor adverse effects with concurrent administration and explain why more patients needed to stop statins in the remdesivir trial.

Many unanswered questions remain concerning the interactions between severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the liver, the role of the proinflammatory state favoring cytokine release,[4] and the impact of ischemia, hepatotoxic drugs, and viral load on COVID-19 severity.[5]

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Potential conflict of interest: Nothing to report.

REPLY:

We respectfully disagree with your interpretation of the lag in serum alanine aminotransferase (ALT) elevations behind aspartate aminotransferase (AST) elevations in patients with COVID-19. Specifically, you suggest that this lag reflects a dissociation between ALT