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Reply to: Sarcopenia should be evaluated in patients with acute-on-chronic liver failure and candidates to liver transplantation. Reply letter

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Reply letter

Sarcopenia should be evaluated in patients with acute-on-chronic liver failure and candidates to liver transplantation.

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Dear Editor

We thank Artru and colleagues (1) for their interest in our study and for commenting specifically on the importance of sarcopenia on post-LT outcomes. Given the retrospective nature of our study, the severity of sarcopenia was not routinely measured (2). We, therefore, welcome the important data provided by Artru et al. in this issue of the Journal. They studied 314 patients who underwent liver transplantation for ACLF and had detailed evaluation of sarcopenia using transversal right psoas muscle thickness at the level of the umbilicus (TPMT/height) and psoas muscle index (PMI) at the L3-L4 level. They showed a clear negative impact of sarcopenia on survival in women but only a negative trend in men. Their observations are in keeping with recent recommendation from AASLD (3) who advocate systematic use of objective standardized metrics for assessing 'sarcopenia' and 'frailty' in all patients with cirrhosis using PMI and 'liver frailty index' respectively. These recommendations are justified by the increasing evidence that sarcopenia and frailty are substantial risk factors for mortality. Early diagnosis would also be crucial and appropriate nutritional support and physical activity interventions should always be considered. We, therefore, agree with the authors that diagnosing sarcopenia and frailty is important in ACLF patients undergoing assessment for LT. Assessment of muscle mass by PMI or TPMT/height, as suggested, are likely more appropriate rather than performance-based test as patients with ACLF are frequently critically ill.

It was however, reassuring to note that although sarcopenia was independently associated with mortality, over 75% patients survived 1-year suggesting extreme care in rejecting listing ACLF patients on account of sarcopenia alone as the 28-day mortality of ACLF patients without LT can be over 60% (4). Further prospective studies are needed to refine the criteria to define futility of LT based on the assessment of the severity of sarcopenia. Their observation that severity of ACLF is associated with more severe sarcopenia suggests the existence of a catabolic state in these patients and indicates the need for careful nutritional support. The global CHANCE study (NCT04613921), which is sponsored by the European Foundation for the Study of Chronic Liver Failure and is being performed in collaboration with the International Liver Transplantation Society, ILTS, and European Liver and Intestinal Transplant Association, ELITA, is ongoing and will likely clarify this crucial issue.

References

1. Artru F, le Goffic C, Pageaux GP, Saliba F and Louvet A. Sarcopenia should be evaluated in patients with acute-on-chronic liver failure and candidates to liver transplantation. *J Hepatol* 2021, *in press*
2. Belli LS, Duvoux C, Artzner T, Bernal W, Conti S, Cortesi PA et al. Liver transplantation for patients with acute-on-chronic liver failure (ACLF) in Europe: Results of the ELITA/EF-CLIF collaborative study (ECLIS). *J Hepatol*. 2021 Sep;75(3):610-622.
3. Lai JC, Shui AM, Duarte-Rojo A, Ganger DR, Rahimi RS, Huang CY et al. Frailty, Mortality, and Healthcare Utilization after Liver Transplantation: From the Multi-Center Functional Assessment in Liver Transplantation (FrAILT) Study. *Hepatology*, 2021 Dec 4. doi: 10.1002/hep.32268. Online ahead of print.
4. Arroyo V, Moreau R and Jalan R. Acute-on-Chronic Liver Failure. *N Engl J Med*. 2020 May 28;382(22):2137-2145.

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