Letter to Editor -Response to "Frailty and Other Indicators for Predicting Mortality and Hospitalization in Patients With Cirrhosis"

We thank Kawada Tomoyuki for their insightful comments on our study entitled "A comparison of different frailty scores and impact of frailty on outcome in patients with cirrhosis".[1,2] We are also grateful for this opportunity to address a few observations noted by Kawada Tomoyuki.

We agree that SPSS software does not support statistical comparison of the area under the curve (AUC) of each ROC curve. Instead, the SPSS software prepares a statistical test of significance in each AUC, whether AUC is equal to 0.5. Most of the statistical analysis in our manuscript was done using SPSS software; however, the software used to compare AUCs of different frailty scores and a comparison of two ROC curves was done by using Vassarstats: Statistical computation website (http://vassarstats.net). The data on mortality and hospitalization within 6 months were predicted by several independent variables with logistic regression analysis, hence Odds Ratios were used. We also calculated the Hazard ratios of different variables as predictors of mortality using the stepwise cox regression model for multivariable analysis which is shown in Table 1 below. However, we agree with Kawada Tomoyuki *et al.* for the valuable observation and this should have been included in the final manuscript.

We also agree that there is the need for longer follow-up and a larger sample size for stable prediction and keeping EPV above 10 as proposed by Pedduzi *et al.*[3] We have acknowledged this limitation of small sample size, single-center enrolment, and relatively small follow-up period in the discussion section. A multi-centric study with larger sample size, and a longer follow-up period, taking into account the ethnic differences in frailty parameters across the globe may resolve this issue.[4]

Table 1 Hazard Ratios for the Different Variables Investigated as a Possible Predictor of Mortality.

Parameters	Univariate hazard ratio (mean + CI)	*P*-value	Multivariate hazard ratio (mean + CI)	*P*-value
Etiology of the liver disease				
Alcohol	2.56 (1.04–6.28)	0.04	3.49 (1.23–9.86)	0.02
Hepatitis C	0.31 (0.04–2.29)	0.25		
NASH	0.37 (0.05–2.75)	0.33		
Alcohol + Hepatitis B	1.81 (0.24–13.43)	0.56		
SBP	9.74 (3.58–26.46)	0.01	1.63 (0.45–5.95)	0.46
BMI	0.72 (0.63–0.82)	0.07		
Frailty (LFI)	35.12 (4.72–261.33)	0.01	10.62 (1.29–87.58)	0.02
CTP score	1.85 (1.48–2.32)	0.01	1.31 (1.02–1.69)	0.04
MELDNa	1.19 (1.11–1.28)	0.01		
MMSE	0.49 (0.38–0.63)	0.01	0.76 (0.5–1.2)	0.21
CLDQ	0.09 (0.03–0.28)	0.01	0.08 (0.01–0.52)	0.01
FSS	3.72 (1.63–8.44)	0.02	0.52 (0.14–2.39)	0.45

Abbreviations: BMI, Body mass index; CI-Confidence interval; CLDQ, Chronic liver disease questionnaire; CTP, Child-Turcotte-Pugh; FSS, Fatigue severity scale; HE, MELDNa, Model of end-stage liver disease-sodium; MMSE, Mini-mental state examination; NASH, Non-alcoholic steatohepatitis; SBP, Spontaneous bacterial peritonitis.

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CREDIT AUTHORSHIP CONTRIBUTION STATEMENT

ST-drafted manuscript, critical revisions, SS- drafted manuscript.

CONFLICTS OF INTEREST

None

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