

[ LETTERS TO THE EDITOR ]

**Reply to Comments on Relationship between Hypoalbuminemia on Admission and Long-term Mortality in Patients with Acute Decompensated Heart Failure**

**Key words:** hypoalbuminemia, acute decompensated heart failure, long-term mortality

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**The Authors Reply** We appreciate the interest of Dr. Imamura in our recent paper, as well as his valuable comments (1). In our study, hypoalbuminemia was defined as a serum albumin level of  $\leq 3.4$  g/dL because the median serum albumin level was 3.4 g/dL, which is generally accepted as the cutoff value (2-4). In response to Dr. Imamura's initial comment, we performed a receiver-operating characteristic (ROC) curve analysis, and 3.8 g/dL was found to be the ideal cutoff value for predicting the outcome in our dataset. However, hypoalbuminemia at admission, defined as a serum albumin level of  $\leq 3.8$  g/dL, was not associated with the long-term outcomes [hazard ratio (HR), 1.21; 95% confidence interval (CI), 0.70-2.22;  $p=0.511$  in the pre-match model, and HR, 0.97; 95% CI, 0.45-2.07;  $p=0.934$  in the post-match model].

The duration of follow-up varied across individual cases on the basis of the relatively long enrollment period (i.e., 5 years) and thus the numbers at risk decreased with the passage of time. In the Kaplan-Meier survival analyses, the two curves crossed after several years, as Dr. Imamura pointed out. However, the proportional hazards assumption was confirmed in both the pre-match and post-match models using log-minus-log survival graphs. It is often difficult to show the relationship between parameters/conditions in the acute phase and the long-term outcomes. However, many reports have investigated the relationships between parameters/conditions in the acute phase and long-term outcomes (5, 6). Again, we thank Dr. Imamura for his interest and comments on our paper.

**Author's disclosure of potential Conflicts of Interest (COI).**

Hiroyuki Daida: Fees for promotional materials, Kirin, Kaken

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