

Predicting Mortality of Critically Ill Patients by Blood Glucose Levels (*Diabetes Metab J* 2013;37:385-90)

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We appreciate your interests and comments on our study, “Predicting mortality of critically ill patients by blood glucose levels” which was published in *Diabetes & Metabolism Journal* 2013;37:385-90 [1].

As you mentioned, previous several studies demonstrated that the association of hyperglycemia and mortality was greater in individuals without known diabetes in comparison to those with known diabetes [2-4]. It was also reported that intensive glucose control improved the outcome of prolonged critically ill patients without known diabetes, but showed no survival benefits in those with known diabetes [5]. In their studies, glucose values were defined as mean glucose values throughout the entire intensive care unit (ICU) stay, which is in contrast with our study where we used the glucose values at the day of ICU admission. There appears to be some differences in the significance of hyperglycemia during ICU stay and at the day of ICU admission, partly in terms of its sustainability. Sustained uncontrolled hyperglycemia in nondiabetic subjects during ICU stay could implicate the effect of more critically ill conditions than that found in diabetic subjects and might be more harmful to the subjects who have not been previously exposed to hyperglycemia. However, our study was intended to evaluate whether single dysglycemia at the day of ICU admission, regardless of its sustainability, had a predictive value for hospital mortality. Lepper et al. [6] also used single random glucose concentration on admission in patients with pneumonia and showed that patients with pre-existing diabetes had a

significantly increased overall mortality compared with those without diabetes (crude hazard ratio, 2.47; 95% confidence interval, 2.05 to 2.98; $P < 0.001$). This result could be consistent with and support our result which suggest that acute dysregulation of glucose metabolism have an impact on mortality in critically ill subjects regardless of presence of diabetes.

It is now well known that hypoglycemia increase mortality, especially in critically ill patients [7,8]. Therefore, it is important to evaluate the association between hypoglycemia and mortality. It was unfortunate that a subgroup analysis within group 1 (below 100 mg/dL) could not be conducted due to limitation of the number of subjects. However, it is supposed that the increased risk of hypoglycemia in group 1 may have contributed to increased mortality of this group.

We hope to conduct a well-organized study to clarify the relationship between dysglycemia and mortality in critically ill patients. I appreciate again for your interests and crucial comments.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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