



# Lactate Parameters Predict Clinical Outcomes in Patients with Nonvariceal Upper Gastrointestinal Bleeding

Although the incidence of peptic ulcer was decreased, upper gastrointestinal bleeding (UGIB) still remains major cause of hospitalization with substantial mortality despite significant advances in its management (1). To optimize the management of UGIB, many scoring systems (such as Glasgow-Blatchford score and the Rockall score) have been suggested as tools for predicting outcomes and aiding early decision-making for intervention (2,3). Especially, many studies have reviewed the usefulness of scoring system for predicting the prognosis and the efficacy of the intervention in patients with peptic ulcer bleeding in non-variceal upper gastrointestinal bleeding (NVUGIB), its ability to predict the need for clinical intervention has yet to be established, as has its validity in Asian populations.

Lee et al. (4) examined whether several lactate parameters in terms of predicting outcomes of bleeding patients and sought to establish a new scoring model by combining lactate parameters and the AIMS65 score. They revealed many lactate parameters were related with the re-bleeding, mortality rate and admission duration in NVUGIB patients. Using lactate parameters combined AIMS65 score and AIMS65 score, the discriminating power of the models for mortality and re-bleeding rate increased but did not reach statistical significance. Increasing serum lactate level causes lactic acidosis in special condition. Generally, lactic acidosis is characterized by persistently increased blood lactate levels (usually > 4–5 mmol/L) in association with metabolic acidosis. It remains the most common cause of metabolic acidosis in hospitalized patients. Furthermore, tissue hypoxia causes cellular metabolism to shift to the anaerobic pathway, increasing lactate production (5). For this reason, lactate has been evaluated as a prognostic tool in a number of critical-care patient populations, including patients with septic shock, recent surgery, burns, and trauma, and has been found to predict mortality among these very ill patients. In addition, determination of circulating lactate levels is technically and practically feasible. Thus, it is interesting to use the lactate parameter combined AIMS65 score for predictive model in NVUGIB patients and it makes sense. Most of predictive indicators using lactate parameter and the lactate clearance rate (LCR, %/hr) might be the most important parameter for predicting re-bleeding and mortality, because it really reflects the change of critical status

of patient's condition. However, there is uncertainty about how serum lactate levels change and whether they accurately reflect re-bleeding rate and mortality rate in gastrointestinal bleeding patients. Furthermore, the lactate level was also one of laboratory parameters for reflecting the patient's condition and it would be reasonable to evaluate other parameters to predict and the mortality and re-bleeding rate in gastrointestinal bleeding in future study.

## DISCLOSURE

The author has no potential conflicts of interest to disclose.

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