Specified risk prediction is what we need in cardiac surgical patients

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We read with great interest Dr Hekmat’s article [1]. As this is their second-time publishment of the CASUS risk scoring system, we first want to thank them for their effort and intend to make a comment.

Most of the scoring systems have excluded cardiac surgery patients as the acute pathophysiologic sequelae of cardiopulmonary bypass are transient, and may have no impact on outcome. Thus, outcome prediction in cardiac surgical patients in the postoperative intensive care period may be unreliable.

Low cardiac output syndrome (LCOS) is a clinical condition that is caused by a transient decrease in systemic perfusion secondary to myocardial dysfunction. The outcome is an imbalance between oxygen delivery and oxygen consumption at the cellular level, which leads to metabolic acidosis. Although LCOS is observed most commonly in patients after cardiac surgery, it may present in various disease processes resulting in cardiac dysfunction. Progressive LCOS is the trigger of postoperative complications and the result is mortality, morbidity and prolonged intensive care unit and hospital stays. Any single risk scoring used commonly in intensive care units cannot focus on potential LCOS. Different disease subgroups are prone to different postoperative outcomes and different postoperative scenarios. The effect of LCOS in a valvular population is more dramatic than that reported in patients undergoing isolated coronary artery bypass grafting (CABG) [2]. Compared with a 17-fold increase in patients undergoing CABG, LCOS portended a 38-fold increase in mortality after aortic valve surgery and a 30-fold increase in a study [3]. Although the development of LCOS was associated with a significant increase in operative mortality, from 1.3% to 30%, the independent predictors of LCOS and mortality were not alike.

As all the risk scoring try to grasp the same problem from different views such as gastrointestinal and respiratory, we should focus on real-time LCOS prediction and our scoring systems should focus on subgroup risk factors [4].

References


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Reply to the Letter to the Editor

Reply to Arslan et al.

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We thank Dr Arslan and his colleagues [1] for their comment on our article [2]. Dr Arslan and colleagues [1] stressed on the importance of low cardiac output syndrome (LCOS) as an outcome predictor and claimed that it was not considered in any scoring system as a variable. However, there is a misunderstanding in their comment regarding the meaning of LCOS. By definition, LCOS is the requirement of intra-aortic balloon pump (IABP) or inotropic support for longer than 30 min to maintain a systolic pressure >90 mmHg and a cardiac index (CI) >2.2 l min⁻¹ m⁻² [3]. Actually, all items of this definition (components of LCOS) were included and validated in different scoring systems. Moreover, it was clearly discussed, when one or more of these items were excluded from those systems. In our scoring system cardiac