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Reply to the Commentary on "An appraisal of neostigmine versus sugammadex for neuromuscular blockade reversal in patients with a prior heart transplant"

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Dear Editor,

Chowdhury and Baidya [1] raise concerns regarding our retrospective study of the use of sugammadex (SGX) and neostigmine (NEO) in patients with previous heart transplantation. These authors were especially interested about the baseline renal and pulmonary function of the participants and how such characteristics could contribute to the longer length of stay for the SGX cohort.

We agree that baseline differences in both renal and pulmonary function are important determinants in the incidence of post-operative complications. Unfortunately, these baseline data were not collected in our population, so we do not have information about their influence on our results. Although we recognized this as a limitation, we also speculated that the length of stay was longer after thoracic surgery, possibly due to clinical features incompletely captured in our retrospective study causing the SGX population to be higher risk patients compared with the NEO group. Further investigation is certainly warranted on the matter, and that should include considering baseline pulmonary and renal function.

Additionally, it was mentioned by Chowdhury [1] that pulmonary and renal dysfunction is frequent in the immediate post-operative period following cardiac transplantation. However, our population included patients who had undergone transplantation, been discharged from the hospital, and presented at a later date for non-cardiac surgery. Some of these patients had years between SGX/NEO exposure and their cardiac surgery. Such a clinical timeline would undoubtedly minimize the risk of post-transplantation renal and pulmonary dysfunction impacting the response to neuromuscular blockade antagonism.

It is true that the safety profile of SGX in end-stage renal disease (ESRD) patients is not fully established and remains an off-label use in this population [2]. However, the available evidence suggests the use of SGX as a reasonable alternative for neuromuscular blockade reversal in ESRD patients [3–6]. A previous study done by our team included 219 ESRD patients receiving SGX as a reversal agent and showed that 8.2% (18 patients) presented pulmonary complications. However, after a careful review, most of these complications appeared to be unrelated to the neuromuscular blockade [4]. Therefore, we support the use of SGX in ESRD as a potential alternative for neuromuscular blockade antagonism in patients at risk for complications related to residual neuromuscular blockade.

Finally, postoperative pulmonary complications are multifactorial in heart transplant patients [7]. Although we cannot specifically comment on the difference in incidence of these between the SGX and NEO groups, we would be cautious about

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any study that suggests that a single drug substitution would significantly impact this complex outcome in these complex patients.

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