Reply to the letter

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To the Editor:

We thank Sun and Huang for their comments [1] on our article [2].

They highlighted the need to classify and analyze perioperative anaphylaxis (PA) based on its severity. We agree with their opinion and reanalyzed the cases included in our article after grouping them according to the severity of symptoms (Suppl. Table 1). As a result, we found that severe anaphylaxis tends to produce skin symptoms less frequently. Indeed, absent or delayed skin symptoms due to hemodynamic collapse in severe anaphylaxis have been previously suggested [3]. Since only 55% of anaphylaxis cases without skin symptoms were correctly diagnosed [4], diagnosing PA in the absence of skin symptoms is challenging. Anesthesiologists should consider anaphylaxis when unexpected hypotension or hypoxia develops during anesthesia.

They also stated that further research was needed, especially on anaphylaxis during anesthesia induction. Certainly, the diagnosis is not easy during induction of general anesthesia because of the multiple drugs administered at this time and the presence of other confounding factors that can lead to hypotension and hypoxia. Reexamination of the characteristics of the cases that occurred at anesthesia induction in our article showed that nine of the 13 cases were caused

by rocuronium [2]. In contrast, there was only one case caused by propofol and none by opioids [2].

Since most PA studies, including ours, are retrospective studies, large-scale prospective studies are needed in future to clarify the reality of PA, including its epidemiology, pathogenesis and clinical outcomes.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s00540-021-02978-w>.

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