

# Author Response to the Letter to Editor “Reckoning the Inhaled Sedation in Critically Ill Patients: INSTINCT I”

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Received on: 25 October 2022; Accepted on: 26 October 2022; Published on: 31 October 2022

**Keywords:** Cost of care, Critically ill, Inhaled sedation, Intravenous sedation, Richmond agitation sedation scale, Sedation.  
*Indian Journal of Critical Care Medicine* (2022): 10.5005/jp-journals-10071-24360

We must thank Karim et al. for their insightful comments.<sup>1</sup> We agree that the current practice for sedating mechanically ventilated patients is to maintain light sedation (Richmond Agitation Sedation Scale, RASS: -2). However, we must keep in mind that this is because for most sedative regimens that are used in clinical practice, there is a time lag of several minutes or hours to wear off. Inhaled sedation is unique in that it only takes a few minutes for the depth of sedation to change. This means that if we were to target a RASS score of -2, within minutes a patient can become totally awake (RASS: 0 or even 1) and then is in danger of self-extubation. To prevent this most intensivists practicing inhaled sedation aim to keep a RASS of -3 or -4, so even if the sedation wears off due to some reason, he will still come only up to a RASS of -2 or -1. This is what we have observed in our practice as well. It is an advantage of inhaled sedation that the sedation can be almost instantly switched on or off, as per clinical requirements. Our suggestion for people intending to use inhaled sedation will therefore be not to aim for a lighter plane of sedation (RASS: -1 or -2) but a deeper level of sedation. A word of caution though, a recent study showed that the patients on inhaled sedation showed a trend toward negative drift toward a deeper level of sedation for the same MAC values. What this means for routine practice is that even if the end-tidal concentration and MAC are being monitored, RASS monitoring is essential to prevent too much deepening of sedation.<sup>2,3</sup>

We also agree that the MACage data are likely to be significantly different; however, we did not keep a record of these data. We wish to reiterate again here that, particularly for the intensivists with a nonanesthesia background, once we routinely start using inhaled sedation, it is not mandatory to use Anesthesia Gas Monitor for checking MAC and end-tidal concentration of inhaled agents. The patient needs to be monitored using a convenient and easy-to-use sedation scale. This is similar to using intravenous sedation agents; for example, when we use midazolam or propofol, we do not monitor the blood levels of these agents, but just look at the sedation levels clinically.

Coming lastly to the cost of the sedation per 24 hours. The total cost of disposables (device itself, FlurAbsorb for preventing the atmospheric spill, syringe, and infusion line) for using AnaCoDa is approximately INR 16,000.00 and INR 1,100 for the isoflurane. However, when patients need sedation for a longer duration, i.e., >24 hours, we can use multiuse FlurAbsorb which lasts for nearly 2–2.5 days (10 syringes). This will reduce the cost. Also though most of the pieces of equipment used for inhaled sedation are single use, as per the manufacturer’s recommendation, some

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**How to cite this article:** Kulkarni AP, Bhosale SJ. Author Response to the Letter to Editor “Reckoning the Inhaled Sedation in Critically Ill Patients: INSTINCT I”. *Indian J Crit Care Med* 2022;26(11):1229.

**Source of support:** Nil

**Conflict of interest:** None

disposables may be used for longer than 24 hours, reducing the cost further. Inhalational sedation can certainly prove to be cost-effective when we consider the likelihood of reduced duration of mechanical ventilation due to early possibility of extubation. If this reduces the ICU length of stay. This was not the objective of our current study. The forthcoming multicenter ISEDATED (Inhaled vs intravenous SADATion Effect on incidence of Delirium: INSTINCT III) study, however, should hopefully be able to answer this question.

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