Letter to the Editor: Role of Ketamine in Vaso-Occlusive Crisis of Sickle Cell Disease

Dear Editor,

I read the systematic review article regarding ketamine infusion for vaso-occlusive crisis (VOC) in patients with sickle cell disease (SCD) published in the January-April 2021 issue with profound interest. I greatly appreciate the efforts of the authors to analyze the role of ketamine in this population in depth. I wish to present my reflections on that article, especially regarding ketamine safety.

Alshahrani et al. have concluded that available evidence is not enough to confirm the efficacy and safety of ketamine. However, the safety of ketamine is well-established over many decades, although its efficacy in VOC of patients with SCD has some limitations, as substantiated in this review article under the heading “Limitations.”

Niesters M et al. have observed that short-term infusions of ketamine produced potent analgesia during the time of administration only, while infusions for 4 to 14 days resulted in long-term analgesia for 3 months based on the few studies available at that time. Furthermore, ketamine is well-acceptable to patients, particularly when benzodiazepines are used to control the psychotropic side effects in clinical scenarios. Nevertheless, proper monitoring is a requisite aiming at hemodynamic parameters, central nervous symptoms, etc. Niesters et al. have also stated that ketamine administrations should be confined to patients with severe neuropathic pain who were resistant to other therapies based on the prevailing evidence in 2013. A recently published study also concluded that the incidence of adverse effects was low and ketamine is reasonably safe even in the long-term treatment of patients with depression based on the survey and the published studies.

I greatly credit the authors for the comprehensive analysis of all the previous studies on this topic. On the other hand, I also feel that closer inspection of some studies would affect the quantitative as well as qualitative analysis of this systematic review. For example, the study by Sheehy et al. has included many varieties of patients for pain management and observed that the reduction of pain score was highest in patients with cancer pain and intermediate in SCD patients. Besides, the dose used in their protocol also varied between patients such as opioid naïve (0.05–0.4 mg/kg/h), opioid-tolerant (0.05–1 mg/kg/h), and opioid-induced hyperalgesia (1 mg/kg/h). Similarly, of the 604 patients included in the final analysis from 14 studies, 120 should be removed because the comparative group received morphine infusion, not ketamine.

Lastly, it is worth mentioning that two more clinical trials (randomized) are also available in the registry in addition to the three mentioned in this review. They are: “Sub-dissociative Intranasal Ketamine for Pediatric Sickle Cell Pain Crises” (ClinicalTrials.gov Identifier: NCT02573714) and “Low Dose Ketamine and Acute Pain Crisis (LDK-SCD)” (ClinicalTrials.gov Identifier: NCT04330183). These two trials are interesting because one is using the intranasal route, which would be useful in patients uncooperative for intravenous cannulation, and another trial is using a standardized dose of 0.3 mg/Kg of intravenous ketamine.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

M. S. Raghuraman
Department of Anesthesiology and Pain Medicine, Sree Balaji Medical College and Hospital, Bharath Institute of Higher Education and Research, Chennai, Tamil Nadu, India

Address for correspondence: Dr. M. S. Raghuraman, Sree Balaji Medical College and Hospital, Bharath Institute of Higher Education and Research, #7, Works Road, New Colony, Chromepet, Chennai - 600 044, Tamil Nadu, India.
E-mail: drraghuram70@gmail.com

Submitted: 17-Apr-2021  Accepted: 26-Oct-2021  Published: 17-Jan-2022
REFERENCES

1. Alshahrani MS, Alghamdi MA. Ketamine for sickle cell vaso-occlusive crises: A systematic review. Saudi J Med Med Sci. 2021;9:3-9.
2. Niesters M, Martini C, Dahan A. Ketamine for chronic pain: Risks and benefits. Br J Clin Pharmacol. 2014;77:357-67.
3. Feifel D, Dadionov D, C Lee K. Safety of repeated administration of parenteral ketamine for depression. Pharmaceuticals (Basel). 2020;13:151.
4. Sheehy KA, Lippold C, Rice AL, Nobrega R, Finkel JC, Quezado ZM. Subanesthetic ketamine for pain management in hospitalized children, adolescents, and young adults: A single-center cohort study. J Pain Res. 2017;10:787-95.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.