Egyptian Journal of Anaesthesia 33 (2017) 387

HOSTED BY

Contents lists available at ScienceDirect

Egyptian Journal of Anaesthesia

journal homepage: www.sciencedirect.com

Letter to the Editor

Comment on: "Automated control of end-tidal sevoflurane in living donor hepatectomy - a prospective, randomized, controlled study."

Dear Editor of Egyptian Journal of Anaesthesia,

I read an article published in the July 2017 issue of EGJA with great interest [1]. The authors had analyzed the consumption of sevoflurane in the donor hepatectomy patients, by comparing the manual versus automated control of administration of inhalational agents [1].

They had observed that consumption of sevoflurane was significantly lower in the automated End tidal controlled [EtC] 0.5L group than in EtC-2L and manually controlled [MC] groups (4.2 ± 1.3 ml/h, 12.6 ± 2.6 ml/h, and 15 ± 2.9 ml/h respectively), with p-value of 0.001. The authors had concluded that the method of automated control of sevoflurane administration is potentially economical [1].

However, my point of contention is that it is the fresh gas flow [FGF], which is the main factor in deciding the amount of inhalational agent consumed, regardless of whether it is used in the manual method or automated mode. The authors themselves admitted it in the introduction as well as in the discussion section [1]. Hence, it is not surprising that the difference between the amount of sevoflurane consumed in EtC-2L and MC-2L is not significant. As a consequence, the cost incurred was also not significantly differing between EtC-2L and MC-2L groups (0.13 ± 0.2 $/min Vs 0.14 ± 0.3 $/min), whereas, it was significantly lesser in EtC– 0.5L group (0.03 ± 0.01 $/min, p = 0.002).

Hence, I'm of the opinion that the sentence in the discussion, **"the use of EtC mode can save around 11 ml of sevoflurane/hour (5.28 $)"** [1], is factually incorrect and misleading the readers. Of course, the automated mode has a benefit that the anesthesiologist can dedicate more time for other tasks as frequent adjustments of the settings of FGF, vapor concentration are avoided, although it does not alter the amount of sevoflurane consumed [2].

Further, the study by Lortat-Jacob B et al. is also supporting my point of view. In this study, published in the year 2009, only the desired end-tidal concentration of desflurane was set on the Zeus machine while the volatile agent concentration, as well as the FGF, were automatically calculated by the Zeus [3]. Hence, the reduction of desflurane consumption in the automated mode group was mainly because of large reductions in FGF [3]. Lortat-Jacob B et al. also stated [based on a previous study published in the year 2005] that automatic FGF setting only could reduce the consumption of volatile agent significantly, while the consumption was almost similar if the "fixed FGF" were used, regardless of the mode [3].

I also feel that it would have been better, if the authors had used the bispectral index [BIS] monitor to assess the depth of anesthesia intraoperatively, although they had assessed the awareness postoperatively on day one [1].

The references 20 and 21 of that article [1] are the same, making the bibliography redundant by one number.

References

[1] Kandeel AlRefaey, Elmorshedi Mohamed, Abdalla Usama, et al. Automated control of end-tidal sevoflurane in living donor hepatectomy, a prospective, randomized, controlled study. Egypt J Anaesth 2017;33:233–7.

[2] Lucangelo U, Garufi G, Marras E, Ferluga M, Turchet F, Bernab F, et al. End-tidal versus manually-controlled low-flow anaesthesia. J Clin Monit Comput 2014 Apr;28(2):117–21.

[3] Lortat-Jacob B, Billard V, Buschke W, Servin F. Assessing the clinical or pharmaco-economical benefit of target controlled desflurane delivery in surgical patients using the Zeus anaesthesia machine. Anaesthesia 2009;64:1229–35.

Raghuraman M.S. *

Department of Anesthesiology, Shri Sathya Sai Medical College & Research Institute, Ammapettai, Kancheepuram Dt., Chennai 603108, S.B.V. University, India

* Address: 42/101, D.L.F.Garden City, Thazhambur, Kancheepuram Dt., Chennai 603130, India.

E-mail address: drraghuram70@gmail.com

Available online 7 August 2017

Peer review under responsibility of Egyptian Society of Anesthesiologists.

http://dx.doi.org/10.1016/j.egja.2017.08.001