Doi: 10.5152/TJAR.2019.28445

Turkish Journal of Anaesthesiology & Reanimation

Timing May Influence the Pharmacodynamics of Atropine as Pre-Medication

Aybike Onur Gönen, Eren Fatma Akçıl
Department of Anaesthesiology and Reanimation, İstanbul University-Cerrahpaşa, Cerrahpaşa School of Medicine, İstanbul, Turkey

ORCID IDs of the authors: A.O.G. 0000-0001-9314-5054; E.F.A. 0000-0002-5956-2265.

Cite this article as: Onur Gönen A, Akçıl EF. Timing May Influence the Pharmacodynamics of Atropine as Pre-Medication. Turk J Anaesthesiol Reanim 2019; 47(2): 164.

Dear Editor,

We have read the article by Nishiyama comparing midazolam and hydroxyzine as a pre-medication before the induction of general anaesthesia1 with great interest. Providing pre-medication to the patient does not only improve patient experience but can also ease the anaesthesiologist's work in managing patient's haemodynamic parameters.

We worry that the author may have overlooked the pharmacodynamics of atropine in the design of the study. Midazolam and atropine (M+A) were injected 15 min before anaesthesia induction, whereas hydroxyzine and atropine (H+A) were injected 30 min before. As per previous literature and this article, 15 and 30 min are reasonable time scales to observe the adequate onset of action of intramuscular midazolam and hydroxyzine, respectively (1, 2). Atropine, on the contrary, may have a more profound action at 30 min than at 15 min. Intramuscular atropine as an anaesthetic pre-medication is often injected 30–60 min in advance (3).

Although not statistically significant with the number of patients in the study (80), H+A group had higher blood pressures, initial high-frequency component and heart rates than M+A group. This difference can be attributed to midazolam or atropine (or a combination of both). This is difficult to determine with the variable injection time of atropine between the groups, especially when the M+A group had only half the recommended pre-medication time. The lack of inhibition of post-intubation sympathetic activation by hydroxyzine observed in this study may as well be due to the sympathetic-vagal imbalance caused by atropine's greater amount of action.

Nishiyama makes an excellent use of heart rate variability as a marker of autonomic activity to compare these drugs; however, we believe atropine injections should have been at the same time. In short, the pharmacodynamics of atropine may matter in this context.

References

1. Nishiyama T. Effects of Premedication on Heart Rate Variability at Induction of Anaesthesia: Comparison between Midazolam and Hydroxyzine. Turk J Anaesthesiol Reanim 2018; 46: 229-32. [CrossRef]
2. Kapetansky D, Warren R, Hawtof D. Cleft Lip Repair Using Intramuscular Hydroxyzine Sedation and Local Anesthesia. Cleft Palate Craniofac J 1992; 29: 481-3. [CrossRef]
3. WHO. WHO Model Prescribing Information: Drugs Used in Anaesthesia. Essential Medicines and Health Products Information Portal.1989 (cited 2018 July 30th). Available from: URL: http://apps.who.int/medicinedocs/en/d/Jh2929e/3.html#Jh2929e.3.1

Corresponding Author: Aybike Onur Gönen E-mail: aybikeonur@gmail.com

Received: 25.07.2018 Accepted: 15.08.2018
Available Online Date: 29.01.2019