

A Confound Revelation of Physical Incompatibility between Heparin Sodium and Atracurium Besylate

Sir,

Heparin sodium is an anticoagulant agent, commonly used intraoperatively during cardiac surgery.^[1] Atracurium besylate is a commonly used nondepolarizing neuromuscular blocking agent in the current practice of general anesthesia.^[2] This article reports an incidence of a physical incompatibility between these two commonly used medicines in anesthesiology.

Inadvertent drawing up of heparin sodium (Caprin[®], Samarth Life Sciences Pvt. Ltd., Mumbai) into a syringe previously used to administer atracurium besylate (Celon laboratories Ltd., Andhra Pradesh) results in the formation of a white precipitate. This observation was reproduced *in vitro* after mixing 1 ml of heparin sodium with 1 ml of atracurium besylate in a new sterile 5 ml syringe. Similar white precipitates were also noticed with different brands of preparation of atracurium besylate (Artacil-100, Neon Laboratories Ltd., Mumbai) and heparin sodium (V-parin, VHB Medi Sciences limited, Uttarakhand).

Heparin sodium is supplied as an isotonic solution for intravenous use, and each milliliter of the drug contains 1000 or 5000 IU of heparin sodium (derived from porcine intestinal mucosa) and benzyl alcohol or chlorocresol as preservative. The pH range is 5.0–7.5. Each milliliter of injection atracurium contains 10 mg of atracurium besylate, 0.9% w/v benzyl alcohol as a preservative, and benzenesulfonic acid to adjust the pH to 3.2–3.7.

The reason behind the formation of precipitates upon mixing of two acidic agents is uncertain. This is a heretofore unreported physical incompetence between the two commonly used intravenous agents in anesthesiology. It is also not known whether the precipitate is harmful if it enters the systemic circulation.

This observation suggests that heparin sodium and atracurium besylate combination should be added to the list of drugs known to cause physical incompatibility. Hence, these two

agents should be administered through different intravenous access whenever a co-administration is required.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Tuhin Mistry, Ankita Chaki

Department of Anaesthesiology and Critical Care, AIIMS, Raipur, Chhattisgarh, India

Address for correspondence: Dr. Tuhin Mistry, 26, Unique Park, Paresch Majumdar Road, PO Haltu, P.S. Garfa, Kolkata - 700 078, West Bengal, India.
E-mail: dr.tuhin2014@gmail.com

REFERENCES

1. O'Carroll-Kuehn BU, Meeran H. Management of coagulation during cardiopulmonary bypass. *Contin Educ Anaesth Crit Care Pain* 2007;7:195-8.
2. Raghavendra T. Neuromuscular blocking drugs: Discovery and development. *J R Soc Med* 2002;95:363-7.

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.

Access this article online

Quick Response Code:



Website:

www.karnatakaanaesthj.org

DOI:

10.4103/kaj.kaj_4_18

How to cite this article: Mistry T, Chaki A. A confound revelation of physical incompatibility between heparin sodium and atracurium besylate. *Karnataka Anaesth J* 2017;3:40.

© 2018 Karnataka Anaesthesia Journal | Published by Wolters Kluwer - Medknow