Anaesth Crit Care Pain Med 38 (2019) 675

ELSEVIER

SFAR
Société Française d'Anesthésie et de Réanimation

Letter to the Editor

Physical instability of an infusion containing ropivacaine, clonidine and adrenaline tartrate in syringes for pre-operative administration

To the Editor,

We investigate the physical stability of an infusion containing ropivacaine, clonidine and adrenaline tartrate, three pharmaceutical compounds usually used in operating room for loco-regional anaesthesia. The awareness of the stability of a ready-to-use mixture containing the three components could allow staff anaesthetists to inject patient only once. Moreover, the preparation in advance by a Centralised IntraVenous Admixtures Service (CIVAS) could be considered in terms of preparation quality and time management.

In order to evaluate the physical stability of the mixture, five syringes of 10 ml containing 5000 μg/ml ropivacaine hydrochloride, 3.75 μg/ml clonidine hydrochloride and 5 μg/ml adrenaline tartrate were prepared by a CIVAS under aseptic conditions. The infusions were stored in polypropylene syringes protected from light during 7 days at 5 ± 3 °C. Periodically (after 0, 1, 2, 4 and 7 days), solutions were visually inspected in front of black and white backgrounds to detect any colour change or particle appearance. Microscopic analyses (Jenamed, Carl Zeiss, Germany) with a magnification 250X were performed, checking the presence of crystals after a centrifugation at 2150 g for 5 minutes. Absorbance at three wavelengths (350, 410 and 550 nm) was measured (Genesys 10 UV, Spectronic Unican, USA) to exclude a turbidity increase. The pH stability was also assessed (InoLab, WTW GmbH, Germany).

Immediately after preparation, two distinct populations of crystals were visible under the microscope for each syringe (Fig. 1). The crystals were not visible to the naked eye, even after 7 days. Despite the presence of crystals, there was no change of absorbance all along the study at 350 nm (mean of absolute absorbance ± SD: 0.01 ± 0.01), 410 nm (0.001 ± 0.001) and 550 nm (0.000 ± 0.001). The pH values stayed stable (5.8 ± 0.1).

Unfortunately, this study showed that infusion of ropivacaine, clonidine and adrenaline tartrate in syringe was physically unstable immediately after preparation. Therefore, it is not possible to mix the three pharmaceutical products before the injection to the patient, even with an extemporaneously reconstitution.

Disclosure of interest

The authors declare that they have no competing interest.

Marie-Lise Colsoul[a], Benjamin Lardinois[a], Laurence Galanti[a], Laura Soumoy[b], Jean-Daniel Hecq[b,*]
[a]*Medical Laboratory, CHU UCL Namur, Yvoir, Belgium*
[b]*Hospital Pharmacy, CHU UCL Namur, Yvoir, Belgium*

*Corresponding author
E-mail address: jean-daniel.hecq@uclouvain.be (J.-D. Hecq).

Available online 18 July 2019

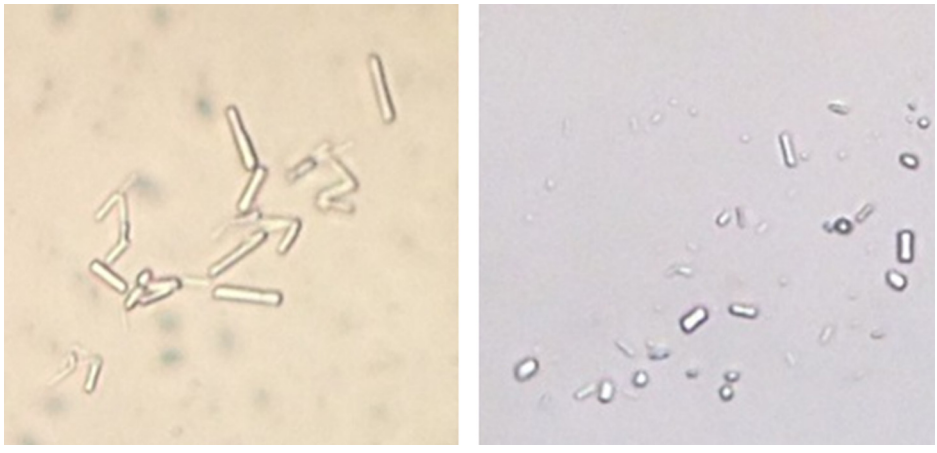

Fig. 1. Populations of crystals observed under the microscope 250X immediately after the infusion preparation.

https://doi.org/10.1016/j.accpm.2019.07.006