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LETTERS TO THE EDITOR

Answer to the question of Dr. Da-Qiang Zhao about hypobaric ropivacaine



Resposta à pergunta do Dr. Da-Qiang Zhao sobre ropivacaina hiperbárica

Dear Editor:

First of all I want to thank you for your kind interest on our manuscript entitled "Ropivacaine for unilateral spinal anesthesia; hyperbaric or hypobaric?"¹ on behalf of the authors. You got a query on how the baricity of the solution was 0.997.² First of all I have to state that the densitometer we have used in the study was up to three decimals sensitive and the measurements of the samples were done at 26 °C which was the preset temperature of the laboratory and we assumed it as the room temperature. The density of distilled water decreases from 1 mg mL⁻¹ after 4 °C gradually as reported by Patterson and Morris,³ which means that distilled water is hypobaric at both room temperature and body temperature. Secondly, McLeod has defined the densities of local anesthetic solutions of bupivacaine, levobupivacaine, and ropivacaine 23 °C and 37 °C stating that only except for levobupivacaine 5 and 7.5 mg mL⁻¹ all local anesthetics behave hypobaric at body temperature.⁴ Since both distilled water and the local anesthetic solution are hypobaric, the resultant mixture is hypobaric. There may be inadvertent mistakes at third decimal of the baricity of the solution we have measured due to that the densitometer we used was only three decimals sensitive and a 2 °C hotter

environment than room temperature at the laboratory, where density measurements were performed, may have changed the last decimal of the density. In conclusion, the resultant solution was hypobaric. I hope this could help your query.

Conflicts of interest

The author declares no conflicts of interest.

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