

Onset response of bupivacaine 0.5 % which has been added with sodium bicarbonate on epidural block

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Abstrak

Banyak keuntungan yang ditawarkan pada penggunaan tehnik anestesi epidural, namun dibalik itu terdapat pula beberapa masalah, diantaranya mula kerja yang relatif lama (lebih-lebih bila menggunakan bupivakain); padahal kasus-kasus emergency yang membutuhkan tehnik anestesi dengan mula kerja cepat semakin meningkat akhir-akhir ini. Dilandasi upaya memecahkan masalah tersebut, yaitu mempercepat mula kerja bupivakain, dilakukan uji klinis potong lintang acak buta ganda pada 40 penderita yang akan menjalani bedah abdomen dan ekstremitas bagian bawah dengan blok epidural, untuk mempelajari mula kerja bupivakain dengan penambahan natrium bikarbonat. Subyek diambil secara consecutive sampling dengan kriteria seleksi ASA I – II, umur 20-60 tahun, berat badan 50-60 kg, tinggi badan 150-170 cm. Secara acak subyek tersebut dialokasikan ke dalam 2 kelompok, dimana kelompok perlakuan mendapatkan blok epidural (penusukan pada L3 – 4, posisi tidur miring ke kiri) menggunakan campuran 20 cc bupivakain 0,5 % + 0,5 cc natrium bikarbonat 1,4 %, sedangkan kelompok kontrol mendapatkan 20 cc bupivakain 0,5 % + 0,5 cc aquabides. Waktu untuk mencapai blok sensorik setinggi dermatom torakal 10 diukur berdasarkan hasil “pin-prick” dan waktu untuk mencapai blok motorik berdasarkan “Skala Bromage”. Hasil penelitian menunjukkan pemendekan mula kerja blok sensorik yang sangat bermakna ($p < 0,01$) pada kelompok perlakuan (10,2 + 1,4 menit) dibanding kelompok kontrol (19,5 + 1,3 menit). Demikian pula mula kerja blok motorik juga mengalami pemendekan yang sangat bermakna ($p < 0,01$) pada kelompok perlakuan (13,3 + 1,6 menit) dibanding kelompok kontrol (23,0 + 1,2 menit). Disimpulkan bahwa penambahan natrium bikarbonat dapat mempercepat mula kerja bupivakain pada blok epidural. (Med J Indones 2004; 14: 7-10)

There are many advantages in using epidural anesthesia technique. However, there are also some constraints, such as the relatively long onset, particularly in the case of bupivacaine. Whereas the need of a rapid onset of anesthesia technique for emergency cares is increasing lately. The objective of this study was to find a method to hasten the onset of bupivacaine. This is a cross sectional randomized double blind controlled clinical trial performed on 40 patients who would undergo lower abdomen and extremity surgery with epidural block. We evaluated the onset of action of bupivacaine which has been added with sodium bicarbonate. Consecutive sampling method was applied to get the sample. The criteria of sample are ASA I – II patient, aged of 20-60 years old, 50-60 kg of weight, 150-170 cm of height. Patients were allocated randomly into two groups. The treatment group would get epidural block using mixture of 20 cc of bupivacaine 0,5 % + 0.5 cc of sodium bicarbonate 1.4 %, whereas the control group received 20 cc bupivacaine 0.5 % + 0.5 cc aqua bides. Time to reach sensoric block at the level of thoracal 10 dermatome using the pinprick method and time to reach motoric blockade using the bromage scale was recorded. The result of this study showed a significant shortening of the onset of sensory blockade ($p < 0.05$) in the treatment group (10.2+1.4 minutes) compared with the control group (19.5+1.3 minutes). The onset of motor blockade had also a significant shortening ($p < 0.05$) in the treatment group(13.3+1.6 minutes)

compared with the control group (23.0±1.2 minutes). It was concluded that the addition of sodium bicarbonate can hasten the onset of bupivacaine on epidural block. (Med J Indones 2004; 14: 7-10)