Response: Fospropofol: Pharmacokinetics?

Sir,
The pharmacokinetic and pharmacodynamic results of liberated propofol published by Shah et al. could be inaccurate.¹ They have mentioned in their article that they would carry out studies using appropriate assay methods to assess the same and find the degree of error within a period of 12 months. They have not been able to publish the new data and six previously published articles have been retracted.¹ The assay inaccuracy is limited to propofol kinetics only, and therefore, previously published fospropofol kinetics are unaffected.²

Time to achieve Cmax of liberated propofol at 12 and 8 min, the volume of distribution of liberated propofol 5.8 l/kg, and the mean terminal phase half life of 2.06 ± 0.77 h for propofol, described in pharmacokinetics in our article,³ may be inaccurate. Three references (Schywalsky et al.,⁴ Fechner et al.,⁵ and Gibiansky et al.⁶) in our review article⁵ have been retracted. Pharmacokinetic data of liberated propofol have been quoted by us from Gibiansky et al only. We wish to bring to your notice that US FDA approval label for fospropofol as on 21-01-2010, which was accessed by the authors on 17-08-2011, about the pharmacokinetics of liberated propofol has not changed till date.⁷

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Paresthesias at multiple levels: A rare neurological manifestation of epidural anesthesia

Sir,

Despite the safety margin, serious neurologic injury is a widely feared complication of epidural anesthesia and can occur in approximately 0.03–0.1% of all patients. The mechanism of injury may vary and possibly include direct needle trauma to the spinal cord or spinal nerves, spinal cord ischemia, accidental injection of neurotoxic drugs or chemicals, introduction of bacteria into the subarachnoid or epidural space, or rarely epidural hematoma resulting in limited motor weakness, paraplegia, and/or diffuse injury to cauda equine roots. [1,2]

We encountered multiple paresthesias at different intervertebral spaces during the insertion of epidural catheter for lower limb orthopedic surgery in a 40-year-old man. Epidural anesthesia was administered with patient in sitting position and using 18G Touhy needle for the placement of a railroad fixator. The surgery warranted repeated manipulation of the operated bone during the next 1 week. On insertion of epidural catheter at L4-5, L3-4, and L2-3 interspaces, patient complained of paresthesias in the left lower limb, which got relieved on withdrawal of catheter. Thereafter, the bevel was rotated back to face toward the roof and epidural catheter was threaded uneventfully and fixed at 11 cm to the skin at L2-3 interspace. After administration of test dose and establishing sensory level at T10 with local anesthetic solution, surgical procedure commenced which lasted for 2 h with no eventful episode. The catheter was retained postoperatively for pain relief by administration of 0.2% ropivacaine 8 ml as and when required. The catheter was removed on the 6th postoperative day with no neurological deficit, and in between, the surgical manipulations were carried out with the help of top-up doses of epidurally administered ropivacaine.

The incidence of transient focal paresthesia on needle or catheter placement may vary from 5 to 25%. Incorrect angle of needle insertion may result in direct injury to the spinal cord and nerve roots. In case the paraesthesia persists, the drug should not be injected. Catheter should be reinserted in another interspace or the procedure should best be abandoned. [3,4]

A prospective survey in France involving 71,053 patients receiving neuraxial anesthesia has established that the needle trauma and local anesthetic neurotoxicity caused most of the neurologic complications. [5,6] Presently, there is no literary evidence and also it has not been established whether clinicians should abandon the procedure if a paresthesia is elicited so as minimize the risk of nerve injury during neuraxial block. [5]

In the present case, abandoning the procedure and resorting to general anesthesia would not have served the purpose of the present surgery as manipulation of the bone was required postoperatively also. Laboratory studies have demonstrated demyelination and inflammation after the use of a catheter, which may indirectly contribute to neurologic injury. [5,7]

Imaging techniques, such as computed tomography and magnetic resonance imaging, are useful in identifying infectious and inflammatory processes as well as expanding hematomas. In the present case also, epidural space could have been outlined by administration of contrast through epidural catheter and visualization with C-arm and this can be taken as a limitation of the present case. Neurophysiologic testing, such as nerve conduction studies, evoked potentials, and electromyography, are often useful in establishing a diagnosis and prognosis. Reduced amplitude in evoked responses indicates axonal loss, while an increased latency occurs in the presence of demyelination. [2]

Postoperatively, patients must be followed closely to detect potentially treatable sources of neurologic injury, including hematoma or abscess, constrictive dressings, improperly applied casts, and increased pressure on neurologically vulnerable sites.