

Response to Knezevic et al: Reply from Manchikanti

To The Editor:

We read with interest the comment made by Knezevic et al in reference to the manuscript published by Ghai et al (1), but also the multiple manuscripts published Manchikanti et al (2-15). Manchikanti et al (2,3), assessing the role of interlaminar and caudal epidural injections have shown that addition of steroids may be superior to local anesthetic alone with assessment of disability status at some of the follow-up periods. Though not robust, the major difference was a larger number of patients initially responding to the first 2 procedures when steroids were utilized in the disc herniation group (2). In the interlaminar trial 10 out of 60 patients were non-responsive in Group I with local anesthetic alone, whereas only one of 60 patients was non-responsive to local anesthetic with steroids (2). However, this difference was not seen with the caudal epidural trial (3). In addition with lumbar interlaminar, there were significant differences with pain rating and Oswestry Disability Index with significant improvement at 6 months. However, the significance of this difference was not demonstrated at 12 months and 24 months. Further, when only responsive patients were considered, there were no significant differences at all in either the lumbar or caudal trial. In the caudal trial there was also longer average relief per procedure with local anesthetic and steroids. This trial (3) also showed no significant differences in reference to proportion of patients with significant improvement. Such differences were not observed either with the caudal trial or lumbar interlaminar trials in managing pain of central stenosis or axial discogenic pain (6,7,9,10). Further, with spinal stenosis there was no difference with unsuccessful patients in either group and also without outcomes either in the lumbar interlaminar trial or caudal trial. In fact, in discogenic pain patients fared better with local anesthetic alone (5,6,10). Further, multiple manuscripts also have shown similar results with transforaminal, interlaminar, and caudal epidural injections in disc herniation (2,3,8,11-13). It may be of interest for Knezevic et al to know that in studying the role of caudal epidural injections, Manchikanti et al (3,7) have compared local anesthetic with non-particulate betamethasone, local anesthetic with particulate betamethasone, and local anesthetic with particulate

methylprednisolone with 20 patients in each study with a total of 60 patients in each group receiving steroids. There was no significant difference among the groups. Consequently, Manchikanti et al (3,7) combined the results of 3 steroids as the overall steroid group.

In reference to the criticism of volume, there is no hard and fast rule of how much volume should be used. If there is an extensive filling pattern with 3 mL of contrast, obviously one needs to use a lesser total volume; whereas, if there is a poor filling pattern, one can use high volumes. Manchikanti et al chose 6 mL based on their own experiences; however, 8 mL may not be inappropriate or even 4 mL may not be inappropriate. Until we can prove that particulate steroids are superior to local anesthetic alone or local anesthetic with non-particulate steroids the discussion continues to be academic. It is also interesting that systematic reviews (10-13,16) have shown similar results with local anesthetic alone compared to steroids and various approaches. Consequently, it is extremely difficult to identify the role of a ventral filling pattern. Thus far, there has not been any assessment of outcomes based on filling patterns. Further, even though generally it is assumed that that interlaminar epidural injections are midline, but the majority of the patients with unilateral pain are essentially parasagittal or paramedian injections. They tend to be parasagittal injections in many of the studies including those of Manchikanti et al, specifically in patients with unilateral pain. It is often difficult to obtain bilateral filling patterns even when the patients have bilateral pain with a midline approach as the needle tends to deviate to one side. Even with a slight deviation of the needle significant nerve root filling along with ventral filling is observed. It also has been an overall experience that even though there is significant nerve root filling as if it was administered by a transforaminal approach occasionally ventral filling is not observed. While we appreciate the analysis of outcomes by Candido et al (16) and also the various other comments, we are not quite certain about substantial differences with parasagittal interlaminar epidural injections since the majority of them are parasagittal, lateral, or paramedian injections which may not meet the definition of the authors for parasagittal, but provide the same results. Since a high proportion

of patients have shown improvement in all the trials by Manchikanti et al in practical settings, it will be difficult to improve on the results but it is definitely feasible to replicate the results not only of Manchikanti et al but also of Candido et al and others.

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