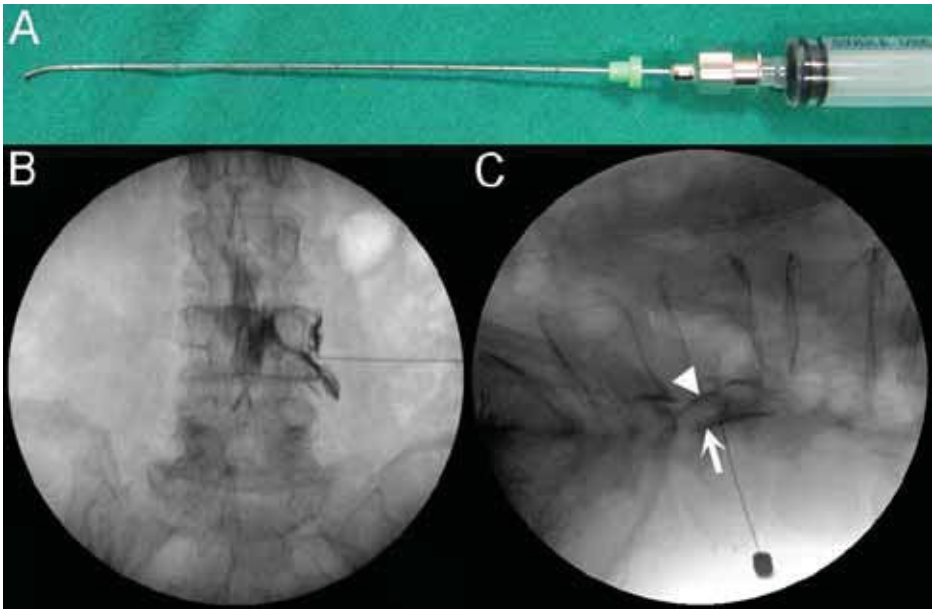

Fig. 2. *Transforaminal epidural contrast injection test to demonstrate that the specially designed needle effectively reached posterior epidural space. The curved spinal needle used in the test (A). The anteroposterior fluoroscopy image shows a needle that has been advanced transforaminally at the L4-L5 level and contrast agent flowing through the epidural space (B). The lateral fluoroscopy image. The triangle (▼) indicates contrast agent in the anterior epidural space when the needle was used in its original straight form. The arrow (↑) indicates contrast agent in the posterior epidural space when the curved needle was used. The curved needle contacted the canal side of the inferior articular process between the facet joint and pedicle (C).*

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CT-Guided Transforaminal Epidural Injections with Local Anesthetic, Steroid, and Tramadol

To the Editor:

We read the article "CT-Guided Transforaminal Epidural Injections with Local Anesthetic, Steroid, and Tramadol for the Treatment of Persistent Lumbar Radicular Pain" by Wewalka M, Abdelrahimsai A, Gunther F, Wiesinger GF, Uher EM (Pain Physician 2012; 15:153-159) with interest (1). It is a well conducted pilot study; discussion has been presented nicely and with logical explanations. However some issues remain to be addressed.

We completely agree with the notion that procedures like transforaminal injections should be routinely scrutinized for possible improvements (paragraph 2, page 157). But what remains unclear is the basis on which tramadol has been selected in this study as an additive in transforaminal injections, similar to the adjuncts added to local anesthetics, commonly used to prolong the duration of post operative epidural analgesia. The observation in this study, as stated, has been the amount and the duration of pain relief. Tramadol may indeed improve the amount of pain relief, but how it could increase the duration? Tramadol undergoes hepatic metabolism via the cytochrome P450 isozyme CYP2B6, CYP2D6 and CYP3A4, being O- and Ndemethylated to five different metabolites. Of these, O-desmethyltramadol is the most significant since it has 200 times the μ-affinity of (+)-tramadol, and furthermore has an elimination half-life of nine hours, compared with six hours for tramadol itself (2). How tramadol could have contributed to the pain relief lasting up to 24hours or 2 weeks, when it has been eliminated from the body much earlier? Has it got any practical relevance in the context of treating radicular pain?

The total dose of ropivacaine used per injection is 2 mg in 2.5 ml of total volume (paragraph 1, page 155). This makes an effective concentration of ropivacaine only 0.08%. Recommended minimum dosage of ropivacaine for sensory block is 0.2% (3). It is not very convincing how ropivacaine at this concentration could be effective in blocking the sensory fibres.

"The first infiltration series was significantly more effective in terms of absolute pain reduction ($P < 0.017$) but there was no significant difference among the first, second, and third injections in terms of pain reduction relative to the pain level before" (paragraph 1, page 156/figure 1, page 155). "Relative pain reduction" should have been more appropriate in this context.

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Response

We would like to thank the authors of this letter for their valuable comment. We agree that the half-life elimination of tramadol and its metabolites would not suggest a prolonged analgetic effect. According to the study of Murthy et al (1) its elimination after caudal administration is even shorter. We also discussed your concern with the department of pharmacology of the

university of Graz (Styria, Austria). They stated that it is not admissible to deduce the amount and duration a local effect from the half life elimation in another compartement. On the other side the most relevant parameter to measure the efficiency of such an intervention is pain. Two of the studies mentioned in our report (Senel et al., Dehkordi et al.) clearly stated an improvement in the amount and duration of the analgetic effect by the supplement of tramadol. The first idea to add an opioid for our nerve root infiltrations was the report of several patients that they experienced a return of their radicular pain after about half a day after the infiltration an then a slow decrease of this pain over the next couple of days. From our experience so far this rebound of pain has decreased since we add tramadol to our infiltration regime. Unfortunately we don´t have the data to support this observation. We also agree that one would not expect a benefit from tramadol after 2 weeks but the relatively low risk of adding tramadol argues for further investigation concerning the pain relief in the first 24 to 48 hours.

The response to your second objection is quite easy. The specification for the amount of ropivacain should have read 5mg instead of 2mg. We apologize for that error.

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Muscle Rigidity Associated with Pregabalin

Pregabalin, like gabapentin, is a structural analog of gamma aminobutyric acid (GABA), which binds to the alpha-2-delta subunit of N-type calcium channels, resulting in decreased release of several neurotransmitters (1,2). It has been shown to be effective for neuropathic pain, but pregabalin can induce adverse events such as dizziness, somnolence, and peripheral edema (3). Other side effects have been rarely reported. Two patients who developed muscle rigidity while taking oral pregabalin are presented.

Case 1 was a 69-year-old man who presented with pain and numbness in his right upper and right lower limbs. He had a traumatic right brachial plexus injury 10 years earlier. He was prescribed clonazepam (4 mg orally), etodolac (400 mg orally), and gabapentin (1600 mg orally) for pain. However, the visual analog scale (VAS) score for pain at rest was 66 mm. Therefore, he was changed to pregabalin (300 mg orally) from gabapentin (1600 mg orally) when pregabalin was approved in Japan in October 2010. The VAS score at rest was 59 mm, and his pain decreased. Seven days after starting pregabalin, he felt rigidity in his arms and legs. Pregabalin (300 mg orally) was changed to gabapentin (1600 mg orally) 14 days after starting pregabalin. The muscle rigidity thereafter resolved.

In the second case, a 75-year-old man presented with a chief concern of sharp and burning pain in the 7th and 8th dermatomes of the right chest following thoracic postherpetic neuralgia 10 years earlier. He was prescribed oxycodone (10 mg orally) for pain. However, the VAS score at rest was 82 mm. In addition, he was prescribed pregabalin (75 mg irally); the VAS score at rest was 42 mm, and his pain decreased. However, because he felt that his leg muscles were stiff and rigid,