Comment on "Radiofrequency Denervation on Lumbar Facet Joint Pain in the Elderly: A Randomized Controlled Prospective Trial"

To the Editor:

We read the article by Chen et al (1) entitled "Radiofrequency Denervation on Lumbar Facet Joint Pain in the Elderly: A Randomized Controlled Prospective Trial" with great interest.

This article, however, raises some potential concerns.

Firstly, the clinical trial registration number provided in this context is CHICTR210043293 in the China Clinical Trial Registration Center at https://www.chictr.org.cn/. However, when we searched for the registration information, No. CHICTR210043293 was not approved for confirmation. Furthermore, the Scientific title of this trial number is "Clinical study of biofeedback functional stimulation in the treatment of chronic low back pain" with different groupings, outcomes and Inclusion criteria. We wonder if there was a mistake in trial number or if late registration was necessary.

Secondly, I would like to draw your attention to some conflicting digits. A total of 270 patients were selected for the study, with 135 patients in each group in the Abstract, Results, and Fig. 4. However, the sample size for each group was 161 and 109, respectively, based on the number of men and women in each group, as shown in Table 1. There might be errors underlying the inconsistency, and the authors should reevaluate their raw statistical analyses. Besides, the sample size calculation was a little bit incomplete. According to the article, there were two main outcomes, and the sample size should be determined by the larger one.

Thirdly, one of the main outcomes was the numeric rating scale (NRS) pain score at different times. We wonder why the author compared the change in NRS scores between two groups rather than the NRS scores at different times directly.

Fourthly, univariate logistic regression was applied in the study to identify possible risk factors for excellent and good rates at 6-month in the radiofrequency group. However, all factors were included in multivariable logistic regression model with an adding of NRS baseline which was not in univariate logistic regression. It might not be a good choice because ignoring results in univariate logistic regression could lead to variable covariance, which was not tested. In our opinion, the authors should have chosen suitable factors for multivariable logistic regression model again by adjusting *P* value and clinical experiences rather than including them all. Additionally, *P* value for gender and FBSS factors was controversial with 95% CI for each factor respectively in Table 6. Statistically speaking, *P* value in a multivariable logistic regression model means that the 95% CI is exclusive of 1.

Lastly, it might be more rigorous that all diagnostic blocks were medial branch blocks (MBB) rather than intra-articular (IA) facet joint injections in the Exclusion Criteria. Although both MBB and IA facet joint injections could serve as diagnostic blocks, IA facet joint injections meet criteria for diagnostic interventions for facet-mediated pain but are less predictive than MBB for response to medial branch RFA and are characterized by a high technical failure rate (2). Besides, the second lesions at the junction of the superior and inferior facet joints are not the part of radiofrequency denervation procedure. It might affect the determination of the radiofrequency denervation efficacy. Is the combination of facet joints radiofrequency essential?

Yu Wang, MD
the First Clinical Medical College
Nanjing Medical University, Nanjing, China

Min Yang, BSc
Department of Anesthesiology and Surgery, The First Affiliated Hospital with Nanjing Medical University, Nanjing, China

Jian-Jun Yang, MD
Department of Anesthesiology, Pain and Perioperative Medicine, The First Affiliated Hospital of Zhengzhou University, Zhengzhou, China

Yin-Bing Pan, MD
Department of Anesthesia and Perioperative Medicine, The First Affiliated Hospital with Nanjing Medical University, Nanjing, China

Xiao-Kai Zhou, MD
Department of Anesthesia and Perioperative Medicine, The First Affiliated Hospital with Nanjing Medical University, Nanjing, China
E-mail: orthoxiaokaizhou@163.com

#Yu Wang and Min Yang contributed equally to this work and shared the first author

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