

Response to “Commentary on Lumbar Lordosis in Chronic Mechanical Back Pain”

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Dear Editor,

We are extremely grateful for the opportunity to discuss the details that have been raised by Kothari et al. Although Kothari et al. have conducted an intelligent review, we would like to address a few points raised in their research.

Firstly, they have suggested using magnetic resonance imaging to examine disc conditions and exclude patients with advanced disc degeneration. They also believed that we should have excluded patients with paraspinal muscle spasm and hamstring tightness from our study which was not done but we do not think so. Our response to this comment is somewhat hidden in the definition of mechanical low back pain which is the pain that does not receive a specific diagnosis. The majority of patients with mechanical low back pain have a multifactorial cause for their problems, which includes deconditioning; poor muscle recruitment; emotional stress; and changes associated with aging and injury such as disc degeneration, arthritis, and ligamentous hypertrophy. This type of lower back pain can be given many names; a few of the common names for this condition are simple backache, nonspecific lower back pain, lumbar strain, and spinal

degeneration [1]. Hence, conditions that Kothari et al. listed as part of the exclusion criteria are some instances of probable causes for mechanical lower back pain.

Secondly, in the article, Kothari et al. correctly pointed to the need to present values of the Oswestry Disability Index (ODI). The mean value of ODI was 30.51 ± 13.75 (31.64 ± 14.41 in females and 26.19 ± 9.96 in males) and there was no significant correlation between the Oswestry Disability Questionnaire (ODQ) score and the degree of lumbar lordosis (Pearson's correlation coefficient; $r=0.125$, $p=0.129$). The mean value of lumbar lordosis (LL) in our sample was 44.69 ± 11.43 degrees but 23 subjects had LL of more than 56.12 degrees and 20 subjects had LL that was less than 33.26 degrees. The mean ODI in patients in the outlier group (either LL greater than 56.12 degrees or less than 33.26 degrees) was 29.12 ± 12.2 and the mean ODI in patients whose LL was within the average range was 31.02 ± 14.29 . The difference between these two groups was not statistically significant (independent samples test; $p=0.45$). Also, using oneway analysis of variance there was no significant statistical difference between any groups of patients who were out of range regarding the degree of lumbar lordosis (LL greater than 56.12 degrees or LL less than 33.26 degrees) and patients

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with an average range ($p=0.38$).

Thirdly, we agree that our study has a skewed male to female ratio (F:M=119:31) which we should have mentioned as one of study limitations. However, we don't think that the ages of subjects will create an issue because osteoporosis mainly causes fractures in the upper spine and not the low back (except sacral insufficiency fractures). In addition, in the acute phase, patients usually experience pain in the upper back. Chronic spinal pain due to deformity caused by vertebral wedging and compression, as well as secondary ligamentous strain is often difficult to distinguish from disc deterioration. Chronic spinal pain can also be categorized as mechanical low back pain [2].

Fourthly, we agree with Kothari et al. that pelvic incidence and sacral slope are two of the other main sagittal spinopelvic parameters, which can potentially contribute to developing low back pain [3]. We have already noted this entry and mentioned that future studies should focus more on disability as the main consequence of low back pain when investigating the role of different spinopelvic parameters in chronic mechanical low back pain [4]. Thus, we recommend performing randomized trials to investigate whether there is a relationship between the various spinopelvic alignment parameters and the level of functional disability in patients suffering from chronic

mechanical low back pain.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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