vertical splint therapy is better than 3-mm-thick vertical splint therapy for the treatment of disk displacement with reduction, and 6-mm-thick vertical splint therapy is better than 3-mm-thick vertical splint therapy for the treatment of disk displacement without reduction," but study findings have not definitively proven that the 4-mm-thick or the 6-mm-thick vertical splint is the best choice or that an increase in splint thickness can lead to improved clinical outcomes.

We hope the authors find our comments helpful and wish them success in their future endeavors.

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In reply to: About "MRI-based determination of occlusal splint thickness for temporomandibular joint disk derangement: a randomized controlled clinical trial"

To the Editor:

Thank you for the opportunity to respond to the Letter to the Editor regarding our recently published article titled, "MRI-based determination of occlusal splint thickness for temporomandibular joint disk derangement: a randomized controlled clinical trial." We thank the authors for their interest in our article. We would like to take the opportunity to respond to the comments and concerns mentioned in the letter.

1. The authors wrote "The thickness of the splint was not individualized but was predetermined on the basis of the data analysis performed *before* the RCT was initiated." Our study aimed to investigate a new strategy for utilizing magnetic resonance imaging (MRI) to determine the best vertical thickness of the occlusal splint for the management of temporomandibular joint internal derangement. Randomization of patients was dependent on the strategy used to choose the splint thickness and not merely on the splint thickness itself, and this was explained in the article. We were not simply examining the impact of 3 mm vs 4 mm and 6 mm in cases of disk displacement with reduction and disk displacement without reduction. The splint thicknesses of 4 and 6 mm were based on the MRI calculation of the greatest changes in the anterior and vertical movements of the condyle and the disk. In this way, the splint thickness that provided the greatest changes in these parameters was chosen. The core protocol of the study was the randomization of patients on the basis of whether or not MRI data were utilized in selection of splint thickness. The use of MRI measurements made this an evidence-based study. The clinical assessments of the different splint thicknesses (3 mm vs 4 mm, and 3 mm vs 6 mm) provided proof of the efficacy of MRI measurements.
2. We disagree with the comment that "the criteria for selecting the splint thickness are arbitrary and lack support." We suggest that the letter authors peruse (for instance) the articles by Kurita et al.,[1] Hasegawa et al.,[2,3] Jolanta et al.,[4] Badel et al.,[5] Laškarin et al.,[6] Yang et al.,[7] Hu et al.,[8,9] and Liu et al.,[10] that support our choice of selection criteria.
3. The letter writers stated that "in some cases of internal derangement, the symptoms are mild and self-limiting, in which case splints should be used as adjunctive treatment and not definitive treatment." They stated that patients receiving placebo or very thin splint should have been included as a control group in the protocol. We stated in our article that the selection of patients was determined by the RDC standards. Besides, what is the thickness of a "very thin splint"? Is it 0.5 mm, or 1.0 mm, or 1.5 mm, or 2.0 mm? We are unaware of any evidence-based studies regarding the effectiveness of a "very thin splint." The suggestion that it is necessary to include a control group receiving placebo or a very thin splint seems to be based largely on opinions expressed in

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past reports and on personal opinions. In addition, it would be difficult to conduct a randomized controlled trial (RCT) based on obscure criteria for symptoms that are "mild" and "self-limiting."

4. With regard to the inclusion criteria, we thank the writers for pointing out the oversight in Figure 2; the data in the Inclusion Criteria section on page 75 of the journal are correct. With regard to Table I, the measurements are those of the mean ± SD of the total anteroposterior condyle distances, and to understand the changes, one can compare the measurements with different splint thicknesses (between 2 mm and 3 mm, 3 mm and 4 mm, and so on). A complete and detailed description of the data in the table is provided on pages 78 and 79.
5. The writers commented on pain scores and treatment for severe pain, stating that patients with pain need thoughtful pain control rather than splint therapies. We believe that to evaluate the effect of the splint, it is necessary to block all other agents of pain relief. For example, if a patient used strong analgesics, it would be impossible to know if the reduction of pain (on a visual analogue scale) was related to the effect of the splint or the effect of the analgesic. In addition, the splint itself is used for pain management.[11,12]

The letter authors question whether "an increase in splint thickness can lead to improved clinical outcomes." This appears to contradict their earlier statement that "the wider the mouth opens, the greater the condyle and the disk move." If an increase in splint thickness does not lead to improved clinical outcomes, what explains the better clinical outcomes in subgroups IB and IIB compared with those in subgroups IA and IIA?

The rationale of our study was to use MRI for recording movements caused by use of different splint thicknesses and to select the thickness that would provide the best outcomes for our patients. To the best of our knowledge, no previous studies have thoroughly investigated the changes in the disk−condyle relationship with the use of different vertical thicknesses of the occlusal splint during MRI acquisition to select the most accurate vertical thickness (that isevidence based) for the treatment of internal derangement. In addition, we point out that we simply reported in the article the findings we obtained in our study. We look forward to further evidence-based RCTs from other authors refining this point. We appreciate the opportunity to clarify these issues raised by the letter writers and hope they find our reply helpful.

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