disagree that it was an "improper" method, but rather a matter of judgment about assessing this outcome in a way that is meaningful to patients and clinicians.

Regarding the other advantages of RM-GIC, it is correct that this was a matter of conjecture by the authors and may be the subject of future research.

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Importance of using platelet-rich plasma

An interesting article in the January 2019 issue contributes to the advancement of orthodontics because it helps us to understand if dental movement can be accelerated with the use of platelet-rich plasma, prostaglandin E2, and others; it has not been demonstrated that there is any clinical treatment that accelerates tooth movement. The study, "Experimental investigation of effects of platelet-rich plasma on early phases of orthodontic tooth movement," was carried out by Sibel Akbulut, Ahmet Yagci, Arzu Hanim Yay, and Betul Yalcin in Turkey.[1]

The authors studied the acceleration and the force when moving teeth in laboratory rats. Certainly they controlled weight, sex, and type of feeding. Their sample was very small: 16 in each group divided into 4 subgroups according to evaluation period. This is a small sample from which to have a conclusion that allows some kind of external validity. Other authors are experimenting with an average of 40 rats, for example, Gudhimella et al[2] using 90 rats and Sugimori et al[3] in 2018 using 50 rats.

On the other hand, it is known that the immediate effect of platelet-rich plasma occurs in the first 24 hours and the continuity of this stimulus will depend on the type of plasma used,[4] the concentration of the same, and the anatomic site where it is applied; even so, its maximal effect will be noticed between 20 and 30 days,[5] so the authors had to consider a minimum study time of at least 30 days for the results to be the most beneficial.

Another point to be discussed in this article was that to accelerate the process of tooth movement they used platelet-rich plasma from other rats, that is, 6 extra rats from which they extracted blood to process the plasma. However, it is possible that when using plasma from other rats, the experimental rats did not achieve an adequate effect because the plasma did not have the same properties as their own might have had. This situation should be taken into account by readers to analyze the results with caution, and it deserves a comment from the authors to incorporate these control variables in future studies.

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REFERENCES

1. Akbulut S, Yagci A, Yay AH, Yalcin B. Experimental investigation of effects of platelet-rich plasma on early phases of orthodontic tooth movement. Am J Orthod Dentofacial Orthop 2019;155:71-9.
2. Gudhimella S, Ibrahim AY, Karanth D, Kluemper AM, Westgate PM, Puleo DA, Huja SS. A rodent model using skeletal anchorage and low forces for orthodontic tooth movement. Am J Orthod Dentofacial Orthop 2019;155:254-63.
3. Sugimori T, Yamaguchi M, Shimizu M, Kikuta J, Hikida T, Hikida M, et al. Micro-osteoperforations accelerate orthodontic tooth movement by stimulating periodontal ligament cell cycles. Am J Orthod Dentofacial Orthop 2018;154:788-96.
4. Sandoval Garzón WD. Evaluación del efecto de plasma rico en plaquetas sobre el tiempo de cicatrización posquirurgica en caninos criollos. Rev Electron Vet 2018;19:051812.
5. Álvarez AM. Plasma rico en plaquetas. Consideraciones para su uso dermatología. Med Cutan Ibero Lat Am 2018;46:87-92.

Authors' response

Thank you for your comments on our article. We are happy to respond.

We used 4 rats in each subgroup. It is true that the larger the numbers, the greater the reliability of the study. However, we consulted a statistician before the study and determined that a power of 80% was achieved with 48 rats total and 4 rats in each subgroup. Power of 80% can be considered acceptable, and using more animals might be overuse and unethical.

We stated, "Biologic activity of growth factors was reported to last for 5 days, and 80% of the factor was reported to be released 24 hours after application and completed in 2 weeks. Therefore, 14 days is enough to