

LETTER TO THE EDITOR

# Re: Stability of tapered and parallel-walled dental implants: A systematic review and meta-analysis

Dear Editor,

We are writing this letter in reference to an article published in the *Clinical Implant Dentistry and Related Research*, titled “Stability of tapered and parallel-walled dental implants: A systematic review and meta-analysis” by Atieh and colleagues.<sup>1</sup> This article compares the stability of tapered and parallel-walled dental implants. Marginal bone change around the implant is one of the secondary outcomes assessed in this systematic review. There are a few inconsistencies with the interpretation of the cited work that need to be clarified.

1. The authors have concluded that it is possible to get superior short-term results in the maintenance of marginal bone by using tapered dental implants. To reach this conclusion, they cite the work by Simmons and colleagues<sup>2</sup> and Torroella-Saura and colleagues.<sup>3</sup>
2. The article by Simmons and colleagues<sup>2</sup> is a pilot study based on 30 implants and the authors have concluded that there is no difference in the marginal bone loss between the two groups—parallel versus tapered apex. Here, it is also relevant to note that the two designs used by Simmons and colleagues<sup>2</sup> only differ in the design of the apical portion of the implant; the crestal portions being of identical design. The inference of being able to achieve better maintenance of crestal bone with a tapered implant design cannot be drawn based on this study.
3. The second citation supporting the inference is a study by Tottoella-Saura and colleagues<sup>3</sup> compared a tapered implant design to a cylindrical implant design in a randomized controlled trial and concluded that the tapered implant group showed lesser marginal bone loss than the cylindrical implant. But the authors also noted that the tapered implant also had a rough collar and crestal micro-threads—as compared to the cylindrical implant which had a 1 mm machined collar and did not have micro threads. Thereby as per the conclusion stated by Tottoella-Saura and colleagues,<sup>3</sup> the crestal bone loss could be related to the differences in the crestal design of the implant. It may not be prudent to relate the crestal bone level differences to the overall tapered or cylindrical design of the implant based on this article.
4. In the discussion of the article by Atieh and colleagues<sup>1</sup> the authors also state the following: “This review showed that the marginal bone levels around tapered dental implants were lower than parallel-walled dental implants”<sup>1</sup>; and mention that this conclusion is similar to that stated by Kadkhodazadeh and

colleagues<sup>4</sup> and Lee and colleagues.<sup>5</sup> This statement seemingly contradicts the conclusion of the article.

5. On further evaluation of the work by Kadkhodazadeh and colleagues,<sup>4</sup> it is apparent that the work is based on cylindrical, tissue level implants with varying heights of polished collars, whereas the work by Lee and colleagues<sup>5</sup> evaluates the effect of micro-threads on the crestal bone levels. Both these articles are not relevant to the stated secondary objective by Atieh and colleagues,<sup>1</sup> and do not back the conclusions drawn therein.
6. In our opinion, the conclusions of the article by Atieh and colleagues<sup>1</sup> are not supported by the cited work and need to be re-evaluated by analyzing the cited work in the proper context. Systematic reviews and meta-analyses are the pinnacle of evidence based decision making and can influence clinical decisions. In-accurate conclusions can potentially have far reaching consequences both to the patients as well as to the industry that depends on the science of dental implantology, thereby it would be prudent to re-assess the conclusions of this article.

## AUTHOR CONTRIBUTIONS

**Mihir Kulkarni:** Literature review, critical revision and approval of manuscript, interpretation of data. **H. R. Meghana:** Literature review, drafting the article, data collection.

## CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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