SECTION 4
CONSENSUS REPORT

For teeth requiring endodontic treatment, what are the differences in outcomes of restored endodontically treated teeth compared to implant-supported restorations?

Members of Section 4 evaluated the systematic review on the relative outcomes of endodontically treated teeth as compared to implant-supported restorations. The focused PICO question addressed by the authors, Syngcuk Kim and Mian K. Iqbal, of the evidence-based systematic review is: For teeth requiring endodontic treatment, what are the differences in outcomes of restored endodontically treated teeth compared to implant-supported restorations?

1. Does the section agree that the systematic review is complete and accurate?

The section agreed that the systematic review was complete and accurate. In addition, we believe that this PICO question addresses a critical issue in dental care. However, we note in particular that the PICO question is limited to the restored single-tooth implant and the restored endodontically treated tooth.

The rationale and approach of the systematic review were considered appropriate for evaluating the survival of the restored single-tooth implant and the restored endodontically treated tooth. For this focused question on the restored single-tooth implant and the restored endodontically treated tooth, survival is an appropriate and available outcome measure that permits evaluation of the 2 therapeutic approaches. The literature search and methods are well described, and overall the section believes that the review is thoughtful in considering the PICO question in the context of comprehensive patient care.

2. Has any new information been generated or discovered since the review cutoff time?

There were 2 investigations available after the review cutoff time. The first is a study by Doyle et al (Doyle SL, Hodges JS, Pesun IJ, Law AS, Bowles WR. Retrospective cross-sectional comparison of initial nonsurgical endodontic treatment and single-tooth implants. J Endod 2006;32:822–827), which is the only article that directly compared restored single-tooth implants with endodontically treated teeth with coronal restorations. The conclusions are consistent with the systematic review and the results have been included in the statistical analysis. The second is a review article by Torabinejad and Goodacre (Torabinejad M, Goodacre CJ. Endodontic or dental implant therapy: The factors affecting treatment planning. J Am Dent Assoc 2006;137:973–977) that presented no new data, and therefore was not included in the analysis. However, the expert opinion is consistent with conclusions of the systematic review.

In addition, it is important to note that the results from this systematic review generated implant survival rates quite similar to the implant survival rates reported in the systematic review of Section 3.

3. Does the section agree with the interpretation and conclusion of the reviewers?

The section agrees with the reviewers that the quality and methodology of the published literature were not ideal for addressing this PICO question and therefore the conclusions are suggestive but not definitive. The state of the present literature does not include clinical trials in which the restored endodontically treated tooth and the restored single-tooth implant are randomly allocated to sites where either treatment can be used.

The section agrees with the interpretations and conclusions of the systematic review with the following consideration. We discussed the reviewers' statement that "priority should be given first to treatment modalities that aim at preserving the natural dentition." The section suggests that, in the absence of randomized controlled trials, the choice of therapy between restored single-tooth implants and restored endodontically treated teeth should be based on consideration of treatment complexity and the patient's informed decision, since the systematic review showed both to be viable treatment alternatives. Relevant issues to consider are the practitioner's training/experience and treatment complexity, which may include but are not limited to active caries, systemic illnesses, periodontal prognosis, and costs.

The section recognizes that continued introduction of new technology in both restored single-tooth implants and restored endodontically treated teeth may affect outcome measurements and suggests that continued systematic reviews are necessary to make contemporary clinical decisions.

4. What further research needs to be done relative to the PICO question?

Clinical trials should evaluate health outcomes in the use of implants and endodontically treated teeth that support prostheses randomly allocated to different sites. It is a priority that such research uses validated outcome measures, employs standardized criteria of success, accounts for selected prosthetic restorations, and evaluates risk factors for restored implants and restored endodontically treated teeth. The outcome measures and criteria should address biological, functional, and esthetic factors as well as quality-of-life measures, cost-benefit ratio for placement and maintenance, and adverse effects. The section also suggests that future research should evaluate the effect of implants and endodontically treated teeth on systemic health.

Future research should consider the impact of restoration modalities (eg, post and cores) or other endodontic procedures (eg, primary treatment, retreatment, surgical treatment) on outcomes of endodontically treated teeth. These initiatives should also consider the impact of subsequent treatment on osseointegration and outcomes of restored implants. Retrospective studies may be most valuable in planning prospective randomized controlled trials. All of the above studies should include a focus on observation periods greater than 10 years.

5. How can the information from the systematic review be applied for patient management?

This systematic review confirmed that both restored single-tooth implants and restored endodontically treated teeth have excellent survival rates with average study periods of 5 to 8 years.

There are few comparative studies to guide practitioners and patients where the restored single-tooth implant or the restored endodontically treated tooth are equally possible therapeutic approaches. In such cases, the results of the systematic review suggest that the treatment decision is a matter of clinical judgment and informed patient preference.

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