Systematic review of the evidence supporting intra-oral maxillofacial prosthodontic care
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CRD summary
This review examined reports of intra-oral maxillofacial prosthesis prescribed after surgical resection of maxillofacial tumours. The authors appear to conclude that various factors influence outcomes and that further research is required. The poor reporting of review methods and lack of evidence supporting the categorisation of factors as significant or not mean that these conclusions cannot be considered reliable.

Authors’ objectives
To review reports on intra-oral maxillofacial prosthesis prescribed to patients after surgical resection of maxillofacial tumours.

Searching
The Cochrane Library (including the Cochrane Database of Systematic Reviews, DARE and the Cochrane Controlled Trials Register) and MEDLINE were searched from 1993 to May 2002 for reports published in the English language. The search strategy used for MEDLINE was reported. In addition, the Journal of Prosthetic Dentistry was handsearched from 1993 onwards and reference lists were screened. Reasons were given for restricting the search to 1993 onwards.

Study selection
Study designs of evaluations included in the review
Systematic reviews, randomised controlled trials (RCTs), quasi-experimental studies, before-and-after studies, cross-sectional studies, cohort studies and case-control studies were eligible for inclusion. Case series and case reports were excluded.

Specific interventions included in the review
Studies of maxillary, mandibular, implant or non-implant-supported intra-oral prostheses were eligible for inclusion. Studies evaluating the materials and pigments used to construct prostheses were excluded. The prostheses evaluated in the included studies were not described.

Participants included in the review
Studies of patients with surgically resected maxillofacial tumours were eligible for inclusion. The participants in the included studies were not described.

Outcomes assessed in the review
Studies that assessed histological outcomes of osseointegration of oral implants and studies that evaluated oral and psychological function without considering the prosthesis used were excluded. The included studies assessed a variety of quantitative and qualitative outcomes (details were reported). The review presented a list of factors that had a significant influence or no significant influence on treatment outcomes.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The studies were assessed using criteria appropriate for each study design; the criteria were based on guidelines of the Centre for Reviews and Dissemination (criteria were listed for each relevant study design). Studies with insufficient or unclear information were classified as not meeting the criterion. Percentage scores were calculated for each study. The authors did not state how the validity assessment was performed, or how many reviewers were involved.
Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The results from individual studies were not presented.

Methods of synthesis
How were the studies combined?
The studies were grouped by study design with the focus on study quality. The numbers of studies reporting specified factors that significantly or non significantly influenced treatment outcomes were listed.

How were differences between studies investigated?
Differences between the studies were discussed with respect to study quality.

Results of the review
Twenty-three studies were included in the review: 2 before-and-after studies, 6 cross-sectional studies, 10 cohort studies and 5 case-control studies. The number of participants was not reported.

Before-and-after studies: both studies assessed qualitative outcomes. One study scored 3 out of 6 for quality and the other scored 6.

Cross-sectional studies: 5 of the 6 studies evaluated qualitative outcomes; the remaining study evaluated quantitative outcomes. Four studies scored 5 out of 5 for quality and two scored 4. Cohort studies: 4 of the 10 studies used the same follow-up period for both treatment groups. Five studies assessed treatment outcomes using either qualitative or quantitative measures. Two studies scored 2 out of 6 for quality, four scored 3, three scored 4 and one scored 6.

Case-control studies: in most studies, the matching of cases and controls was either incomplete or absent. One study evaluated quantitative outcomes. Four studies scored 3 out of 5 for quality and one scored 4.

The review authors listed the following factors as having a significant influence on treatment outcomes: age (3 studies), marital status (1 study), smoking (1 study), site or extent of resection and oncological stage of lesion (9 studies), site of implant placement (5 studies), type of surgical reconstruction (11 studies) and type of prosthetic reconstruction (10 studies).

The review authors listed the following factors as having no significant influence on treatment outcomes: gender (1 study), economic or social background (1 study), radiotherapy (8 studies), hyperbaric oxygen therapy (5 studies) and implant system used (2 studies).

Authors’ conclusions
The authors’ conclusions appear to be that various factors influence outcomes of intra-oral maxillofacial prosthesis and further research is required.

CRD commentary
The review question was defined in terms of the participants, intervention and study design; inclusion criteria for study design were broad, which seemed appropriate, whereas those for outcomes were not specified. The search was somewhat limited, being restricted to English language reports listed in a limited number of sources; the authors acknowledged the possibility that some relevant studies might have been omitted. The methods used to select studies, assess validity and extract the data were not described, so it is not known whether any efforts were made to reduce reviewer errors and bias. Validity was assessed using criteria appropriate for each study design; aggregate scores and some methodological flaws were discussed.

No details of the individual studies were reported, which meant that it was not possible to adequately evaluate the evidence. The review authors listed factors that were associated or not with treatment outcomes, without any supporting data or discussion of the quality of the evidence. There were considerable limitations to this review: poor reporting of
review methods, no details of the individual studies, and no evidence supporting the categorisation of factors as having a significant or no significant influence on treatment outcome. Hence, the authors' conclusions regarding factors influencing the outcomes cannot be considered reliable. The recommendations for further research appear reasonable given the apparently limited quality of the studies presented.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that future studies in the form of multicentre RCTs should enrol stratified groups of patients, be free from bias due to potential confounding factors, use adequate blinding and, if possible, evaluate a large number of patients and determine the factors that influence outcomes.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.