Author's response to reviews

Title: A systematic review of methods to diagnose oral dryness.

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Author's response to reviews:

Reviewer's report

Title: A systematic review of methods to diagnose oral dryness.
Version: 2 Date: 11 November 2011
Reviewer: Arjan Vissink
Reviewer's report:
The authors assessed the literature focussing on the quality of evidence for the efficacy of diagnostic methods used to identify oral dryness. The concluded that the efficacy of the various methods is low and that the various methods/evaluation methods have to be better defined. Although the paper reads well and the conclusions are supported by sound data, there are two sections that need attention and revision to make the readership better understand as how the literature search and subsequent data analysis was performed.

• Discretionary Revisions:
None
• Minor Essential Revisions:
None
• Major Compulsory Revisions:
# Page 4: the subdivision of causes of oral dryness is unclear to me. First the authors have to define what they mean by oral dryness? Is it chronic oral dryness lasting for months or temporary/occasionally oral dryness? Moreover, aplasia, local infection and ageing are (very) rare causes of oral dryness, while there are many causes of oral dryness that are not mentioned.

The above mentioned has been corrected in the BACKGROUND section.
# Page 6: Why to use pilocarpine as a MeSH term as there are many other sialogogues. Why to use xerostomia as a MeSH term and not hyposalivation?

Since this review focused on diagnostic methods and an initial search resulted in a number of publications on intervention with pilocarpine, the decision was made to confine the search by excluding those studies. Studies on intervention with other sialogogues were excluded when screening abstracts for possible inclusion.

When searching literature in PubMed we chose to use the controlled term xerostomia to find articles on the subject. The term hyposalivation is not used as a MeSH term in PubMed. Furthermore xerostomia is defined as decreased salivary flow in the MeSH database.

The term hyposalivation renders 286 titles (All Fields) while the MeSH term xerostomia renders 13167 titles.

211 out of 286 titles (search term hyposalivation) appear in the search with the search term xerostomia (MeSH).

When screening the 75 titles/abstracts (search term hyposalivation) that are not included in the search with the search term xerostomia (MeSH) it can be concluded that 30 are animal/in vitro studies and/or written in a language other than English, 3 are reviews, 5 evaluated the efficacy of different saliva substitutes, 5 related to head and neck radiation therapy, and the remaining 32 titles/abstracts do not evaluate a method for diagnosing oral dryness. In conclusion, none of the above 75 titles/abstracts would have been included in the present review.

Level of interest: An article of importance in its field

Statistical review: No, the manuscript does not need to be seen by a statistician.

Reviewer’s report
Title: A systematic review of methods to diagnose oral dryness.
Version: 2 Date: 16 February 2012
Reviewer: Lars Eliasson
Reviewer’s report:
A systematic review of methods to diagnose oral dryness
Major Compulsory Revisions
1.
This seems to be a mainly well written and structured review about an intricate subject. The intricacy is immediately accentuated by the title. How should dry mouth be defined? Is it reduced salivation, is it the subjective feeling of
xerostomia, or is it when both coincide? The problem is commented on in different parts of the article, but a more focused discussion about this would, in my view, improve the paper. This literature review does, however, contribute to saliva research with its emphasis on the opinion that there is a need for global consensus regarding the terminology and effective diagnostic criteria for xerostomia and reduced salivation.

Nederfors et al. 2000 divided the term salivary gland hypofunction into 3 different entities, acknowledging that these three entities are interrelated and therefore influence each other in different modes.

2. There is very little in the BACKGROUND section about the multitude of different interview protocols used for diagnose of subjective feelings of xerostomia. Can it be argued if these could be used as discriminating diagnostic tools?

This has now been included in the BACKGROUND section.

3. The structure of the paper is sometimes a little mixed up: e.g. sialometry and its cut-off values appear in the BACKGROUND section, while Oral Shirmer´s test and its detail is in the RESULTS, Secretion tests section.

Since sialometry is the most widely used clinical method for diagnosing oral dryness we presented the cut-off values in the BACKGROUND section. Furthermore, sialometry has been used as a reference method in the included studies.

Oral Shirmer’s test was one of the index test methods identified in one of the included studies and is therefore accounted for in the RESULTS section.

4. The section: Secretion/Glandular morphology. This seems to relate to diagnostic procedures for Sjögren’s syndrome rather than general dry mouth.

Since a variety of index test methods were used/described in the included studies we tried to categorize them in order to give the reader an overview of the different methods used to diagnose oral dryness.

5. Table 1. Why are studies on the effect of radiation therapy excluded, but not studies on the effect of Sjögren’s syndrome? This needs explanation. What do you mean by SECONDARY OUTCOME VARIABLE? Is it when xerostomia or reduced salivation is secondary to a generalized illness (e.g. SS, or other
autoimmune disease) or treatment (e.g. radiation, medication)? Or is it when they are secondary findings in studies aimed at something else?

The primary aim of this study was to evaluate the literature concerning methods to diagnose oral dryness. Xerostomia and salivary gland hypofunction are almost inevitably seen in patients whose salivary glands have been irradiated for head and neck cancer. This is a very important group to study but like studies on pilocarpine or other drugs, they describe tests to evaluate external/secondary influence on the secretion and therefore falling outside the primary aim of this study.

With a secondary outcome variable we mean oral dryness secondary to medication and when oral dryness is a secondary finding in studies aimed at something else. This explanation has been added to the RESULTS section.

6. There is quite a lot of focus on the diagnosing of Sjögren’s syndrome in the paper, although the title indicates a focus on oral dryness in general.

Unfortunately many of the studies on oral dryness in general did not meet the inclusion criteria for this literature review. When extracting data according to the pre-established protocol many of these studies were excluded.

7. Table 6. Sialometry or sialochemistry of whole or glandular salivas as reference for what? Subjective xerostomia or Sjögren’s syndrome, or....?

Table 6 illustrates that different salivary secretions have been used as reference method when evaluating an index test. The table legend has been changed to “Salivary secretions used as reference method in the included studies”

Minor Essential Revisions

Has been specified according to the above mentioned suggestion.


Has been corrected.


Has been corrected.

Has been corrected.

12. There are some errors with spacing, irregularities with page numberings, #28: Jacobsson in the reference list.

Has been corrected.

13. Fig. 2. Is this a summary of the quality assessment found in this study? Maybe a better description in the RESULTS section could help a reader to easier comprehend the figure.

The following sentence “. Autors’ judgements regarding seven of the quality items in the QUADAS tool (Table 3, questions no 1,4,6,9,10,11,12 and 13) are presented in Fig. 2.” has been included in the DIAGNOSTIC ACCURACY section.

The figure legend has been changed to “Figure 2 - Quality assessment of individual QUADAS items presented as percentages across all included studies.”

Discretionary Revisions

14. Table 7. Is this table really necessary to publish in this paper? All these criteria are well known, they are published before, and the papers they originate from are properly referred to.

The table has been excluded from the manuscript.

Level of interest: An article of importance in its field

Statistical review: No, the manuscript does not need to be seen by a statistician.