Author's response to reviews

Title: Clinical complications during treatment with a modified Herbst appliance in combination with a lingual appliance

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Author's response to reviews: see over
Dear Prof. Stamm,

we are grateful for the opportunity to revise our manuscript. Changes or additions to the manuscript text and tables have been highlighted using a red font.

We would like to address the comments made by the two reviewers as follows:

**Reviewer #1 / Thomas Stamm:**

*Ethical approval is mentioned in the method section. However a reference number is missing. Please provide.*

*A reference for ethical approval has been added: (#1220-2011; MHH, Hannover, Germany).*

*The authors emphasized the comparison with data reported in the literature. However, there is no search strategy mentioned in the method section to ensure that all studies which reported complications are included for comparison. Please provide information which studies were retrieved and which were included or excluded.*
The following section has been added to the ‘Method’ chapter:

“Literature screening strategy

In order to retrieve relevant data related to the subject of complications following Herbst appliance treatment, an unrestricted electronic search of Pubmed was performed in December 2014. In an attempt to compensate for a holistic, systematic review of the literature using all available databases, the Pubmed search query [(Herbst) AND orthodont* AND (fract* OR compli* OR fail*)] used here was provided with robust truncations, as suggested earlier by Stamm and Hohoff. Title and abstract screening was performed in order to eliminate those papers not relevant to the subject of fracture rates following Herbst appliance treatment. Of a total of 39 publications, seven were identified as being relevant for a potential comparison with the findings of this study. In addition, electronic search was followed by a manual search up of the list of references in those manuscripts identified as being relevant to the subject of Herbst appliance failures”.

In addition, the following information has been added:

“Latkauskiene et al. reported a total of 46 Herbst appliance fractures for a sample of 175 subjects (26.3%) undergoing fixed functional pre-treatment prior to initiation of multi-bracket treatment in some cases. “

We are adding the following publications to the list of references:


Reviewer #2 / Dennis Boettcher:

The subjects and methods are well described. But there is not mentioned how the patients were chosen. Were there any exclusion or inclusion criteria? The further information about the study group is sufficient and the work could be carried out again.

Consecutive patients during or following completion of treatment with the WIN-Herbst appliance were included. The existing section on patient recruitment has been complemented as follows:

The files of all patients currently in active treatment or having undergone complete treatment using the WIN Herbst appliance with a corresponding lingual appliance (Figures 2 und 3) in one orthodontic center (Bad Essen, Germany) were included and screened with a caesura made on September 9, 2014. That is, the single inclusion criterion was treatment with the WIN Herbst appliance. There were no exclusion criteria other than absence of active or completed WIN Herbst treatment. The initial Angle class II malocclusion extended to at least 3/4 cusps of distal occlusion in all subjects.

The results were compared to data from other authors and well weighted. But there is no information given about the search strategy.

A section on the search strategy used here has been added to the ‘Method’ chapter. Please see also my reply to the respective comment of reviewer #1.

Table 3 contains data about different publications but there is no distinction between WIN and Incognito in the column „Lingual Apparatur + Herbst“.

The information that the sample used by O’Keefe was based on Incognito-treated subjects has been given in the text:

“Compared to a different combination of a Herbst appliance with a lingual appliance (Incognito), the fracture rate could be significantly lowered.”
A distinction between Incognito and WIN has not been made in Table 3 (instead, only the references are given), because the information on specific bracket types is also not given for the listed vestibular appliances. The focus of Table 3 was on the comparison between lingual and vestibular systems, in general. We therefore propose to not repeat the information provided by the text in Table 3.

*Further it would be fine if there would be the English expression (Lingual appliance + Herbst).*

Thanks for making us aware of the use of the German term. It has now been translated.

*On page 8 there is a missing „)“.*

Thanks! It is now provided.

We highly appreciate the time both reviewers have devoted to the improvement of our submission, and would like to express our thank for the opportunity to revise our manuscript.

Sincerely,

Michael Knösel