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Campos, RMCS¹; Oliveira, APA².**ADMINISTRATIVE INFORMATION****Support** - FAPEMIG.**Review Stage at time of this submission** - Formal screening of search results against eligibility criteria.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202390050**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 September 2023 and was last updated on 14 September 2023.**INTRODUCTION**

Review question / Objective Are teeth with endodontic treatment and/or a history of trauma more susceptible to cervical resorption after tooth whitening? To know whether tooth whitening has an adverse effect on endodontically treated teeth with or without a history of dental trauma.

Rationale Dental darkening after endodontic treatment is a commonly observed situation. Given the effectiveness of tooth whitening, it is worth considering the application of this treatment to resolve tooth discoloration. However, non-vital teeth, whether or not associated with previous trauma, are more susceptible to cervical resorption. It is therefore relevant to investigate the relationship between tooth whitening techniques in non-vital teeth and the association of this treatment with the development of cervical resorption and other possible adverse effects.

Condition being studied Is the susceptibility to cervical resorption in teeth that have undergone

endodontic treatment and/or have a history of trauma, after tooth whitening. The key question seeks to investigate whether these factors are associated with a greater risk of cervical resorption as an adverse effect of the tooth whitening procedure.

METHODS

Search strategy To carry out research in the databases, it was necessary to use advanced search strategies in the PubMed, Scopus, Web Of Science databases using Boolean operators, MeSH and entry terms.

PubMed: (Tooth Bleaching [mesh] OR tooth bleaching agents [mesh] OR bleaching tooth [tiab] OR teeth whitening [tiab] OR tooth whitening [tiab] OR teeth bleaching [tiab] OR dental bleaching [tiab] OR dental whitening [tiab]) AND (Tooth Resorption [mesh] OR root resorption [mesh] OR teeth resorption [tiab] OR resorptions root [tiab])
Scopus: (INDEXTERMS ({tooth bleaching} OR {tooth bleaching agents}) OR TITLE-ABS ({bleaching tooth} OR {teeth whitening} OR {tooth whitening} OR {teeth bleaching} OR {dental

bleaching} OR {dental whitening})) AND (INDEXTERMS ({tooth resorption} OR {root resorption}) OR TITLE-ABS ({teeth resorption} OR {resorptions root})).

Web of Science: 1# TS= (“tooth bleaching” OR “tooth bleaching agents” OR “bleaching tooth” OR “teeth whitening” OR “tooth whitening” OR “teeth bleaching” OR “dental bleaching” OR “dental whitening”) AND #2 TS= (“tooth resorption” OR “root resorption” OR “teeth resorption” OR “root resorption”) OR 3# AB= (“tooth bleaching” OR “tooth bleaching agents” OR “bleaching tooth” OR “teeth whitening” OR “tooth whitening” OR “teeth bleaching” OR “dental bleaching” OR “dental whitening”) AND #4 AB = (“tooth resorption” OR “root resorption” OR “teeth resorption” OR “root resorption”).

Participant or population Patients with traumatized or endodontically treated teeth.

Intervention Tooth whitening.

Comparator Relation to the occurrence of tooth resorption in non-vital teeth undergoing bleaching.

Study designs to be included Studies that address tooth whitening in teeth with endodontic treatments, with or without a history of trauma, investigating the occurrence of tooth resorption were included. No date or language restrictions were defined, therefore all studies found in the databases will be included. when meeting the inclusion criteria.

Eligibility criteria Duplicate articles, books, letters to the editor, conference abstracts, editorials, in vitro studies, studies where bleaching was carried out in primary teeth and studies where no adverse effects were evaluated were excluded.

Information sources To carry out research in the databases, it was necessary to use advanced search strategies in the PubMed, Scopus, Web Of Science databases using Boolean operators, MeSH and entry terms.

Main outcome(s) As the expected results are still in progress, we can find satisfactory results to answer our key question, in order to guide clinicians in making decisions about tooth whitening.

Data management Mendely, End Note, Rayyan, excel and word.

Quality assessment / Risk of bias analysis The methodological quality is being assessed by the reviewers, Regiane Colmanetti and Ana Paula Ayres independently, using methods used in previous systematic reviews. Thus, the risk of bias will be assessed according to the parameters will receive a "yes" on the specific item, but when it cannot be found, it will receive a "no". Therefore, the risk of bias will be classified based on the number of "Yes" for each study found, considering the following ranges, 1 to 3 high risk of bias, 4 and 5 medium risk of bias and 6 to 8 low risk risk of bias.

After evaluating the parameters described in the studies, the risk of bias of the methodology used in them will be determined with the help of the Revman Software program.

Strategy of data synthesis The study methodology quality scores will be reported as a percentage, where < 60% have a low level of scientific evidence, > 60% a medium level of scientific evidence and < 70%, a moderate level of scientific evidence and greater than or equal to 70% high level of scientific evidence.

Subgroup analysis The study methodology quality scores will be reported as a percentage, where < 60% have a low level of scientific evidence, > 60% a medium level of scientific evidence and < 70%, a moderate level of scientific evidence and greater than or equal to 70% high level of scientific evidence.

Sensitivity analysis Sensitivity analysis seeks to explore how these factors may influence research results and how conclusions may vary under different circumstances.

Language restriction No.

Country(ies) involved Brazil.

Keywords Non-Vital Teeth; Tooth whitening; Tooth resorption; Endodontically Treated Teeth; Traumatized Teeth.

Contributions of each author

Author 1 - Regiane Monyque Colmanetti Santos de Campos - Search for articles and the entire dissertation manuscript.

Email: colmanettiregiane125@gmail.com

Author 2 - Ana Paula Ayres Oliveira - knowledge about the subject sought, corrections and assistance in assembling the manuscript.

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