INAHTA Brief

Issue 2019/029

Title Assessment of pulp wound protection by direct pulp capping

Agency HAS (French National Authority for Health – Haute Autorité de santé)
5 avenue du Stade de France – F 93218 La Plaine Cedex, France
Tel.: +33 (0)1 55 93 70 00 – Fax: +33 (0)1 55 93 74 35, contact.seap@has-santé.fr, www.has-sante.fr

Reference ISBN number: 978-2-11-152887-1, link to full report in French: https://www.has-sante.fr/portail/jcms/c_2893724/fr/evaluation-du-parage-de-plaie-de-la-pulpe-par-coiffage-pulpaire-direct-rapport-d-evaluation-technologique

Aim

The aim was to assess vital pulp therapy by direct pulp capping, onto temporary or permanent tooth, in the event of pulp exposure following carie excavation, trauma or occurring accidentally during care. This assessment was conducted at the request of the National health insurance that wishes to provide coverage for this procedure.

Conclusions and results

On this basis, we can conclude that direct pulp capping is a therapeutic technique for preserving pulp vitality in the event of pulp exposure. The success rate of the procedure tended to vary according to the study and was difficult to estimate. For example, after two years on a temporary tooth, it was estimated at 89%, while on permanent teeth it varied between 52 and 93% depending on the study. The studies failed to highlight any significant differences in terms of success rate, compared to other pulp vitality preservation therapies (indirect pulp capping, partial pulpotomy, full pulpotomy), though these were low-power studies. Concerning the factors that could potentially impact the success rate of direct pulp capping, the fragmented and poor quality data available do not allow us to draw any formal conclusions, even though there appears to be a trend for certain factors; thus, for permanent teeth, the data would appear to suggest a degree of influence of pulpal status (in favour of asymptomatic teeth), of the extent of carious lesion (to the detriment of extensive lesion), radicular edification (in favour of immature permanent teeth) and of the type of definitive restoration (to the detriment of the use of glass ionomer cement). The data concerning the type of material and patient age are contradictory. Finally, the data do not reveal any influence of tooth type, exposure origin, exposure location or practitioner experience.

Methods

This was a critical analysis of the synthetic literature (best practice guidelines, technology assessment reports, meta-analyses and systematic reviews) and of clinical trials, identified by a systematic document search and selected according to explicit criteria, i.e. one technology assessment report, four systematic reviews with meta-analysis, two systematic reviews without meta-analysis, three randomised controlled trials and three retrospective non-comparative studies. The methodological quality of these publications was estimated using grids adapted to the type of document. The technology assessment report was of relatively good methodological quality; the methodological quality of the systematic reviews was good in two cases, relatively good in one case and of average quality in the last three cases. The risk of bias of the comparative studies was moderate in one case and high in the other two. The three non-comparative studies were of average methodological quality.

Written by

Frédéric Nahmias, HAS (French National Authority for Health – Haute Autorité de santé), France.