

COCHRANE-REVIEW

Fluor til ortodontipatienter

Hyppig fluorlakering kan måske hæmme cariesudvikling omkring fast apparatur.

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Demineraliserede "white lesions" kan opstå i forbindelse med behandling med fast apparatur, og man har forsøgt at forebygge den tidlige cariesudvikling med forskellige fluorbehandlinger. Dette opdaterede review har undersøgt effekten af forskellige regimer.

Tre studier med næsten 500 patienter med fast apparatur indgår i reviewet. Patienterne blev under ortodontibehandlingen inddelt i følgende grupper:

- lokal fluorbehandling
- fluorafgivende dele monteret på apparaturet,
- placebo

Et af studierne viste, at lokal behandling med fluorlak i forbindelse med hvert besøg hos specialtandlæge reducerede risikoen for "white lesions" med næsten 70 %, men evidensen er ikke stærk. Dertil er undersøgelsesmaterialelet for begrænset.

Kommentar af professor, odont.dr. Svante Twetman, Tandlægeskolen i København:

– Det er udmærket, og vigtigt, at The Cochrane Collaboration regelmæssigt aktualiserer sine rapporter og systematiske litteraturoversigter. I dette tilfælde er det bemærkelsesværdigt, at kun tre nye studier kunne inkluderes trods det, at der er gået 10 år siden den første rapport, hvor man konstaterede en mangel

på viden. Yderligere tre studier kunne identificeres som igangværende, men endnu ikke afsluttede.

Det er også interessant at konstatere, at 14 studier, som blev inkluderet i 2004, er blevet ekskluderet i det nye review. Det understreger, at kravene til sådan forskning stadig øges. Artiklerne blev først og fremmest udelukket pga. split-mouth-teknik og quasi-randomisering, hvilket er faktorer, som i betydelig grad kan påvirke og skævvride resultaterne.

Kun et af de "nye" studier bedømmes som værende af høj kvalitet, dvs. med lav risiko for bias. Studiet viste, at professionel applikation af fluorlak omkring apparaturet i forbindelse med hvert besøg tydeligt reducerede incidensen af "white lesions", men resultaterne skal verificeres i flere studier, før man kan tale om stærk evidens.

Forfatterne konkluderer endvidere, at professionel applicering af fluor har den fordel, at man ikke behøver at være afhængig af patientens medvirken; daglige fluorskyllinger kan også have en cariesforebyggende effekt, men studier har vist, at den metode kun i ringe omfang følges af ortodontipatienterne.

Som sædvanlig efterlyser Cochranes forfattere mere forskning om cariesforebyggelse, langtidsopfølgninger og undersøgelser ud fra patienternes perspektiv. Man må håbe, at næste opdatering vil give klarere svar på dette.

ABSTRACT

Background

Demineralised white lesions (DWLs) can appear on teeth during fixed brace treatment because of early decay around the brackets that attach the braces to the teeth. Fluoride is effective in reducing decay in susceptible individuals in the general population. Individuals receiving orthodontic treatment may be prescribed various forms of fluoride treatment. This review compares the effects of various forms of fluoride used during orthodontic treatment on the development of DWLs. This is an update of a Cochrane review first published in 2004.

Objectives

The primary objective of this review was to evaluate the effects of fluoride in reducing the incidence of DWLs on the teeth during orthodontic treatment. The secondary objectives were to examine the effectiveness of different modes of fluoride delivery in reducing the incidence of DWLs, as well as the size of lesions. Participant-assessed outcomes, such as perception of DWLs, and oral health-related quality of life data were to be included, as would reports of adverse effects.

Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 31 January 2013); the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library 2012, Issue 12); MEDLINE via OVID (1946 to 31 January 2013); and EMBASE via OVID (1980 to 31 January 2013).

Selection criteria

We included trials if they met the following criteria: (1) parallel-group randomised clinical trials comparing the use of a fluoride-containing product versus placebo, no treatment or a different type of fluoride treatment, in which (2) the outcome of enamel demineralisation was assessed at the start and at the end of orthodontic treatment.

Data collection and analysis

At least two review authors independently, in duplicate, conducted risk of bias assessments and extracted data. Authors of trials were contacted to obtain missing data or to ask for clarification of aspects of trial methodology. The Cochrane Collaboration's statistical guidelines were followed.

Main results

For the 2013 update of this review, three changes were made to the protocol regarding inclusion criteria. Fourteen studies included in the previous version of the review were excluded from this update for the following reasons: five previously included studies were quasi-randomised, a further five were split-mouth studies, three measured outcomes on extracted teeth only and in one, the same fluoride intervention was used in each intervention group of the study. Three studies and 458 participants were included in this updated review. One study was assessed at low risk of bias for all domains, in one study the risk of bias was unclear and in the remaining study, the risk of bias was high.

One placebo-controlled study of fluoride varnish applied every six weeks (253 participants, low risk of bias), provided moderate-quality evidence of an almost 70% reduction in DWLs (risk ratio (RR) 0.31, 95% confidence interval (CI) 0.21 to 0.44, P value < 0.001). This finding is considered to provide moderate-quality evidence for this intervention because it has not yet been replicated by further studies in orthodontic participants.

One study compared two different formulations of fluoride toothpaste and mouthrinse prescribed for participants undergoing orthodontic treatment (97 participants, unclear risk of bias) and found no difference between an amine fluoride and stannous fluoride toothpaste/mouthrinse combination and a sodium fluoride toothpaste/mouthrinse combination for the outcomes of white spot index, visible plaque index and gingival bleeding index.

One small study (37 participants) compared the use of an intraoral fluoride-releasing glass bead device attached to the brace versus a daily fluoride mouthrinse. The study was assessed at high risk of bias because a substantial number of participants were lost to follow-up, and compliance with use of the mouthrinse was not measured.

Neither secondary outcomes of this review nor adverse effects of interventions were reported in any of the included studies.

Authors' conclusions

This review found some moderate evidence that fluoride varnish applied every six weeks at the time of orthodontic review during treatment is effective, but this finding is based on a single study. Further adequately powered, double-blind, randomised controlled trials are required to determine the best means of preventing DWLs in patients undergoing orthodontic treatment and the most accurate means of assessing compliance with treatment and possible adverse effects. Future studies should follow up participants beyond the end of orthodontic treatment to determine the effect of DWLs on participant satisfaction with treatment.

Benson PE, Parkin N, Dyer F, Millett DT, Furness S, Germain P. Fluorides for the prevention of early tooth decay (demineralised white lesions) during fixed brace treatment. Cochrane Database of Systematic Reviews 2013, Issue 12. Art. No.: CD003809. DOI: 10.1002/14651858.CD003809.pub3