

ARTICLE TITLE AND BIBLIOGRAPHIC INFORMATION

Fluoride Varnish Efficacy in Preventing Early Childhood Caries
Weintraub JA, Ramos-Gomez F, et al.
J Dent Res 2006;85(2):172-6

LEVEL OF EVIDENCE

Ib

PURPOSE/QUESTION

To determine the efficacy of different fluoride varnish application frequencies with parental/caregiver oral health oral health counseling versus counseling alone in preventing early childhood caries in young, initially caries-free children.

SOURCE OF FUNDING

Government: National Institutes of Health

TYPE OF STUDY/DESIGN

Randomized Controlled Trial

J Evid Base Dent Pract 2007;7:23-24

1532-3382/\$35.00

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doi:10.1016/j.jebdp.2006.12.015

Fluoride Varnish Application Prevents Caries in Preschool Children

SUMMARY

Subjects

Subjects were 376 caries-free children with a mean age of 1.8 years (6-44 months) from 2 public health centers in San Francisco, a fluoridated area.

Therapy

Subjects all received familial oral health counseling. In addition, children were randomly assigned into groups that received no fluoride varnish, fluoride varnish applied once a year, or fluoride varnish applied twice a year. Children were followed for a period of 2 years, whereupon decayed and filled surface increment or caries incidence over the period was recorded.

Main Outcome Measure

Caries incidence. The National Institute of Dental and Craniofacial Research (NIDCR) diagnostic criteria of clinical cavitation or clinical or radiographic evidence of caries lesion extending into the dentin were used.

Main Results

There was a statistically significant reduced number of children with any caries incidence when children with any number of fluoride varnish treatments were compared with the control group, which received no fluoride varnish treatments. There was an apparent response to increased numbers of fluoride varnish application in the way of increased odds ratios of early childhood caries decayed and filled surfaces incidence with 0 versus 1 varnish application showing an odds ratio (OR) of 2.5 (95% confidence interval [CI] 1.3, 4.7), and 0 versus 2 varnish applications yielding a 3.4 OR (95% CI 1.6, 7.5), and 0 versus 304 varnish applications giving an OR of 18.3 (95% CI 2.4, 138.5).

Conclusions

The percentage of children with caries decreased linearly with increasing numbers of fluoride varnish applications. The study findings support the use of fluoride varnish applications for very young children in an effort toward caries prevention.

COMMENTARY AND ANALYSIS

Given that the American Academy of Pediatric Dentistry guidelines call for an age 1 dental visit within a dental home, the data from the present study further support the age 1 visit as a means to begin the early application of fluoride varnish, and to establish a periodicity appropriate for the risk level of the child. This study was intended to measure the effect of fluoride varnish on caries incidence in previously caries-free children, not caries increment. Therefore, an additional study is needed to look at the effect of fluoride varnish application in very young children who present with existing caries lesions.

The study also reported on a protocol deviation, wherein patients who were supposed to have received treatment with varnish received a

placebo varnish in some instances. For example, 75% of the children who were supposed to receive 2 varnish applications received only 1. About half who were intended to receive 4 varnish applications received only 2. (There was no placebo varnish in the present study, but product was inadvertently substituted that had been intended for another study.) This might explain the high upper end on the confidence intervals regarding caries incidence odds ratios. Given there was a significant caries preventive outcome even considering the inadvertent placebo varnish use, the actual effect may have been under-

estimated. It does, however, raise the question of the effect of the varnish itself.

REVIEWER

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