

Long-term effects of maternal prevention on children's dental decay and need for restorative treatment.

Laitala ML, Alanen P, Isokangas P, Söderling E, Pienihäkkinen K.

Abstract

OBJECTIVES:

In a Finnish study carried out in 1990s, high-carries-risk mothers used xylitol gum on daily basis when their child was 3-24-month old, whereas the high-risk control mothers received biannual fluoride or chlorhexidine treatments. The maternal prevention reduced colonization of mutans streptococci and early childhood caries in children. The present retrospective study aimed to extend the post-trial follow-up to 10-year-old children (n = 148). Additionally, the dental health of these high-carries-risk children was compared with a reference group comprising the rest of the children in the same age cohort (n = 359).

METHODS:

The annual data on dental health and treatments were gathered from public dental care registers.

RESULTS:

The median caries-free age (dmft = 0 and DMFT = 0) was 8.2 in the xylitol, 5.8 in the control, and 8.1 in the reference group (xylitol versus control, P = 0.005, HR = 1.75; 95% CI 1.18-2.60, reference versus xylitol, P = 0.410, HR = 1.13; 95% CI 0.84-1.51 Cox regression). Thus, the children in the xylitol group had caries-free teeth longer than the control group. Compared to the reference group, the xylitol group did not show notable difference. Up to 4 years of age, figures for cumulative restorative treatment visits were 0.2 in the xylitol, 0.7 in the control, and 0.4 in the reference group (xylitol versus control P = 0.006, Student's t-test).

CONCLUSIONS:

The reduced mother-child transmission of mutans streptococci seems to have long-term effects on children's dental health. The maternal use of xylitol reduces caries occurrence and

need for restorative treatment in assumed high-carries-risk children to the average level of the whole age cohort.