Effect of maternal use of chewing gums containing xylitol, chlorhexidine or fluoride on mutans streptococci colonization in the mothers' infant children.

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PURPOSE: The aim was to evaluate the effect of maternal use of chewing gums containing xylitol, chlorhexidine/xylitol or fluoride on the prevalence of mutans streptococci (MS) in the mothers' 18-month-old offsprings. MATERIALS AND METHODS: After screening 416 women with newborn babies, 173 mothers with high counts of salivary MS were randomly assigned into three experimental chewing gum groups containing A) xylitol, B) chlorhexidine/xylitol and C) sodium fluoride. Mothers with low or medium MS counts formed a reference group D without any intervention. The participants in the experimental groups were instructed to chew one gum for 5 minutes, three times a day. The chewing was initiated when the child was 6 months old and terminated one year later. The outcome measure was MS colonization in mothers' 18-month-old infants. Bacterial sampling and cultivation was carried out with the Strip mutans technique. RESULTS: The MS prevalence was 10%, 16%, and 28% in groups A, B, and C respectively. In the reference group D, 10% of the infants harbored MS. The difference between group C and groups A and B was statistically significant (p<0.05). The colonization levels in groups A and B were similar to those obtained in children of mothers with low MS counts (group D). CONCLUSION: Maternal consumption of xylitol- and chlorhexidine/xylitol-containing chewing gums significantly reduced the mother-child transmission of salivary mutans streptococci.

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