

Adolescents With Asthma Have Greater Risk of Cavities

Source: Botelho MPJ, Maciel SM, Neto AC, et al. *Cariogenic microorganisms and oral conditions in asthmatic children. Caries Res.* 2011;45(4):386-392; doi:10.1159/000330233

Investigators from several centers in Brazil evaluated the dental caries risk of asthmatic children. They enrolled 80 children aged 3 to 15 years from an asthma care program at the Londrina State University Hospital. All of the patients were either under continuous treatment with corticosteroids or were using bronchodilators. The study group was paired with an age- and gender-matched control group of 80 children selected from the local public schools who were not using chronic medications. Neither group had other systemic diseases or was using any medications that directly impair salivary function. Health interviews were conducted with parents, and asthma severity was documented. Saliva samples were taken to measure lactobacilli and mutans streptococci (MS) levels. Oral health status, caries experience, caries severity, and biofilm status were evaluated by calibrated examiners. Logistic regression was used to identify the risk of caries in a multivariate analysis. This analysis included the variables asthma or control, salivary MS levels, lactobacilli levels, and biofilm index, all adjusted for age.

First analysis revealed no difference in caries experience between the two groups. When the groups were age stratified, the oldest group, aged 11 to 15 years, showed a higher caries prevalence in the asthma group (2.11±0.36 decayed, missing, or filled teeth [DMFT] vs 1.05±0.31 DMFT in the control group, $P=.024$). Significantly higher levels of MS were observed in the asthma group (70.4±8.95 CFU/spatula) compared with the control group (44.2±4.81 CFU/spatula). There was a significant correlation between MS levels and caries experience in both the study and control groups. A significant correlation was found between MS levels and duration of asthma treatment ($P=.026$). Logistic regression revealed that MS levels and age were important risk factors for caries experience in the entire population.

The authors conclude that dental caries is a multifactorial disease and that children with asthma, in particular adolescents, are at increased risk of tooth decay and should be carefully managed to reduce their caries risk.

Commentary by

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Dr Berg has disclosed no financial relationship relevant to this commentary. This commentary does not contain a discussion of an unapproved/investigative use of a commercial product/device.

Previous investigations of the caries experience of patients with asthma have produced equivocal results. Alavaikko, et al,¹ reported in a systematic review and meta-analysis that while the evidence suggesting a possible association of asthma with increased risk of

caries is inconclusive, physicians and dentists should recommend preventive measures against caries for persons with asthma.

In a study of Mexican children, Vázquez, et al,² found that asthma is not associated with dental caries, but nocturnal asthma symptoms appear to be associated with dental caries in primary dentition. In another recent study amongst a different group of 3- to 15-year-old Brazilian children, Paganini, et al,³ reported that asthma did not seem to influence dental caries experience in children with access to proper dental care.

These marked differences in findings are not surprising given the complexity of factors that alter caries risk. However, the present study did not include a definitive analysis of the oral health behaviors of the sample. It is possible, therefore, that the children with more severe asthma, particularly after longer periods of medication use, were more neglectful of their oral care. Biofilm accumulation, as reported via MS levels in the study, indeed revealed higher counts which were related to more caries experience, but there is no measure to show the direct effect of asthma or its treatment.

In sum, adolescents with asthma who use chronic medication are at higher risk for dental caries and should be encouraged to obtain regular dental care and exercise vigilant oral hygiene measures. Children with asthma, a common chronic disease, need additional attention to avert more severe oral disease.

References

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*emend – from the Latin (c. 1400), “to free from fault”; to improve by critical editing

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