

## Original Article

### Allergic rhinitis and dental caries in preschool children

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#### ABSTRACT

**Background:** Allergic rhinitis (AR) may be overdocumented in cases of dental caries because of controversies in the literature. This study was conducted to investigate the potential relationship between AR and dental caries in children.

**Materials and Methods:** A total of 296 children were included in this cross-sectional study. Participants were evaluated using the decay-missing-filled (DMF) index, and their AR status was evaluated by physical examination and through a standard questionnaire. Baseline demographics and clinical characteristics were compared among groups using Student's *t*-test or the Mann-Whitney U-test, the Chi-square test, and/or Fisher's exact test as appropriate. A level of  $P < 0.05$  was regarded as statistically significant.

**Results:** Evidence of AR was found in 77 (35.1%) participants. There was no significant difference in the rate of tooth decay or DMF between participants with or without AR ( $P = 0.07$ ), but a significant difference was observed in the number of missing and filled teeth between those with and without AR ( $P < 0.05$ ). There were no significant differences in educational level, family income, milk intake, use of pacifier, use of a toothbrush, saliva secretion, or body mass index ( $P > 0.05$  in all cases) between AR-positive and AR-negative patients. Fluoride therapy and oral breathing were identified as confounding factors and controlled using log-linear analysis. The mean rate of DMF in patients who also had AR was 20% greater than in the AR-negative group (odds ratio [OR] = 1.21, confidence interval [CI]: 1.05–1.35) and 15% greater in among children who breathed orally than those who did not (OR = 1.15 CI: 1.02–1.31).

**Conclusion:** AR and oral breathing may have an effect on oral health and dental condition, leading to an increased rate of tooth loss, oral fillings, and development of dental caries.

**Key Words:** Rhinitis Allergic, dental caries, dental filling, mouth breathing

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## INTRODUCTION

Allergic rhinitis (AR) is among the most frequent chronic respiratory diseases that occur in children. The prevalence of this disease seems to vary in different countries from 1.3%–52%<sup>[1]</sup> although it is greater in some countries.<sup>[2]</sup> The reasons for the high prevalence of AR have not yet been elucidated, but the hygiene hypothesis could provide one

explanation.<sup>[3]</sup> This theory suggests that living in a hygienic environment with less microbial exposure increases the susceptibility of allergic diseases.<sup>[4–9]</sup> Persistent oral breathing and infectious oral tissues are complications that may occur as a result of the clinical progression of AR, and low salivary

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