Exposure to Second-hand Smoke and Dental Caries in Children

Expulsión pasiva al tabaco y caries dental de los niños

Dear Editor:

In 1986, the report of the US Surgeon General and the National Research Council showed the available evidence about the adverse effects of passive exposure to tobacco smoke and health in children. Later reports identified more effects of second-hand smoke in children indicated that this exposure was the cause of numerous consequences in exposed children.

There is conclusive evidence of the relationship between the passive exposure to tobacco smoke and the presentation of respiratory symptoms. We present in this study the increased risk for dental caries in both primary as well as permanent teeth in children whose parents are smokers.

In a sample of 281 children aged 5–14 who were seen consecutively in a primary care center and in whom we initially were studying the relationship between the presence of caries with dental hygiene and dietary habits, we would like to show the results that we have found with regards to the exposure to parental tobacco smoke and the presence of caries in their children. The dental examination was done by two dentists in accordance with the methodology of the World Health Organization. By means of structured questionnaires, we determined the frequency of brushing, consumption of sweets and tobacco use of the children’s parents. After the descriptive study, a multivariate logistic regression analysis was done, using the presence or absence of caries as a dependent variable, both in primary as well as in permanent teeth. Table 1 demonstrates that the prevalence of caries in the univariate analysis increases progressively as tobacco habit increases among the parents of the children, going from 12.4% in children whose parents do not smoke to 28.3% if both parents smoke, in permanent teeth. The same phenomenon is observed in primary teeth, going from 21.6% to 34.8%. After the multivariate analysis, adjusting for age, consumption of sweets, frequency of brushing and exposure to second-hand smoke, a progressive increase in the risk for caries is observed, which, although did not reach statistical significance, is consistent with studies that show the increase in the risk for caries with the exposure to tobacco smoke. These data suggest a dose–response effect between the tobacco habit of the parents and the probability of having caries consistent with what is known regarding physiopathological mechanisms of and their biological plausibility.

References


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Table 1
Presence or absence of caries in permanent and primary teeth, according to different variables.

<table>
<thead>
<tr>
<th>Presence of permanent teeth</th>
<th>No</th>
<th>Yes</th>
<th>Crude OR</th>
<th>Adjusted OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.54 (1.34; 1.77)</td>
<td>1.58 (1.35; 1.86)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumption of sweets</td>
<td>1.58 (1.35; 1.86)</td>
<td>2.04 (1.03; 4.04)</td>
<td>1.89 (0.79; 4.50)</td>
<td></td>
</tr>
<tr>
<td>Brush teeth at least once a week</td>
<td>2.04 (1.03; 4.04)</td>
<td>3.3 (1.20; 5.70)</td>
<td>3.18 (1.10; 9.14)</td>
<td></td>
</tr>
<tr>
<td>Parents' tobacco use</td>
<td>2.17 (0.78; 3.65)</td>
<td>1.89 (0.92; 3.74)</td>
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<td></td>
</tr>
<tr>
<td>Brush teeth at least once a week</td>
<td>4.6 (1.16; 6.74)</td>
<td>2.8 (0.74; 5.86)</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Presence of primary teeth</th>
<th>Age</th>
<th>Consumption of sweets</th>
<th>Brush teeth at least once a week</th>
<th>Parents' tobacco use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.90 (0.82; 0.99)</td>
<td>0.9 (0.82; 0.99)</td>
<td>0.89 (0.79; 0.99)</td>
<td>0.89 (0.79; 0.99)</td>
</tr>
<tr>
<td>Consumption of sweets</td>
<td>1.69 (0.78; 3.65)</td>
<td>1.89 (0.92; 3.74)</td>
<td>1.47 (0.62; 3.47)</td>
<td>1.85 (0.92; 3.74)</td>
</tr>
<tr>
<td>Brush teeth at least once a week</td>
<td>1.89 (0.92; 3.74)</td>
<td>2.20 (0.93; 5.23)</td>
<td>2.05 (0.74; 5.86)</td>
<td>2.05 (0.74; 5.86)</td>
</tr>
<tr>
<td>Parents' tobacco use</td>
<td>0.97 (0.49; 1.89)</td>
<td>1.12 (0.55; 2.28)</td>
<td>1.12 (0.55; 2.28)</td>
<td>1.12 (0.55; 2.28)</td>
</tr>
</tbody>
</table>

References
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Effectiveness of High-Flow Oxygen Therapy With Warm Humidification in a COPD Patient With Chronic Cough
Eficacia de la oxigenoterapia de alto flujo con humidificación térmica en un paciente EPOC con tos crónica

Dear Editor:

The administration of home oxygen therapy (HOT) through a nasal cannula is an essential therapeutic measure in the treatment of patients with COPD and chronic respiratory failure. When it is well indicated, its benefits are clear and evident. However, the continued administration of oxygen can present important side effects, among which are those related with the exposure to cold, dry air. Epistaxis, mucosa dryness, thick secretions that are difficult to eliminate and cough are some of the problems that our patients complain of with HOT. Recently, “high-flow” oxygen therapy equipment has appeared on the market, which is able to provide all the gas inspired by the patient and which also incorporates the possibility to warm the air to 37 °C with a humidity of 100%. We present the case of a grade IV COPD patient with HOT and chronic cough in whom the application of oxygen through a system of active humidification was able to eliminate the cough.

Clinical Notes

The patient is a 72-year old diagnosed with grade IV COPD treated with HOT at 2 l/min with nasal cannulae for the past 3 years. The patient used the O3 some 20 h/day. Spirometry done after the administration of salbutamol showed: FVC 2500 (83%),