



Cross-Sectional Study on the Role of Passive Smoking in Atopic Dermatitis Among 495 Children

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Abstract:

Atopic dermatitis (AD) is a common chronic inflammatory skin condition in children. Exposure to environmental factors, such as passive smoking, has been suggested as a potential risk factor for the development and exacerbation of AD. This cross-sectional study aimed to investigate the relationship between passive smoking and the prevalence of atopic dermatitis in a cohort of 495 children. Our findings reveal significant associations between passive smoking and atopic dermatitis, highlighting the importance of recognizing environmental influences in the management of pediatric skin conditions.

Introduction:

Atopic dermatitis (AD), a prevalent pediatric skin condition, is characterized by pruritic and inflammatory skin lesions. The role of passive smoking as a potential risk factor for AD in children has been a topic of interest. This cross-sectional study aimed to assess the relationship between passive smoking exposure and the prevalence of atopic dermatitis in a sample of 495 children.

Methods:

Study Design: This cross-sectional study involved 495 children upto 18 yrs , who were divided into two groups: those diagnosed with atopic dermatitis (AD group) and those without AD (non-AD group). Participants were recruited from fatepur district of Punjab

Data Collection:

- 1. Questionnaires:** Parents or legal guardians completed structured questionnaires to provide information about their child's demographic characteristics, family history of AD, and passive smoking exposure.
- 2. Clinical Assessment:** Trained dermatologists conducted clinical assessments to confirm the diagnosis of atopic dermatitis based on established criteria.

3. Passive Smoking Exposure: Passive smoking exposure was assessed by inquiring about the child's level of exposure to household smoking, the number of household smokers, and the number of cigarettes smoked per day.

4. Statistical Analysis: Statistical analysis included chi-square tests and logistic regression to assess the relationship between passive smoking and atopic dermatitis.

Results:

Among the 495 children studied, 245 were diagnosed with atopic dermatitis (AD group), and 250 were without AD (non-AD group). The key findings are as follows:

1. Prevalence of Passive Smoking:

- In the AD group, 63.7% of children were exposed to passive smoking.
- In the non-AD group, 38.8% of children were exposed to passive smoking.

2. Association Between Passive Smoking and Atopic Dermatitis:

- Children exposed to passive smoking had a significantly higher likelihood of having atopic dermatitis (odds ratio: 2.74, 95% CI: 1.96-3.83, $p < 0.001$).

3. Dose-Response Relationship: A positive dose-response relationship was observed, with increased odds of atopic dermatitis associated with higher levels of passive smoking exposure.

Discussion:

This cross-sectional study demonstrates a significant association between passive smoking exposure and the prevalence of atopic dermatitis in children. Children exposed to passive smoking were more likely to have atopic dermatitis, and the relationship showed a dose-response effect. These findings support the idea that environmental factors, including passive smoking, play a role in the development and exacerbation of atopic dermatitis.

The biological mechanisms underlying this association may involve inflammatory processes triggered by tobacco smoke, alterations in skin barrier function, or immune system dysregulation. Further research is needed to explore these mechanisms and establish causality.

Conclusion:

Passive smoking appears to be a significant risk factor for atopic dermatitis in children, as evidenced by the higher prevalence of AD among children exposed to household smoking. These findings emphasize the importance of public health initiatives to reduce passive smoking exposure in children's environments and the need for healthcare providers to consider environmental factors when managing pediatric patients with atopic dermatitis. Further research is warranted to better understand the mechanisms underlying this relationship and to inform targeted interventions for atopic dermatitis prevention and management in children.