

Ethnic Variability in Persistent Asthma After In Utero Tobacco Exposure

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KEY WORDS

asthma, tobacco, Latino, African American, pregnancy

ABBREVIATIONS

GALA—Genetics of Asthma in Latino Americans

SAGE—Study of African Americans: Asthma, Genes and Environments

FEV₁—forced expiratory volume in 1 second

IgE—immunoglobulin E

OR—odds ratio

CI—confidence interval

SHS—secondhand smoke

All the authors made substantive intellectual contributions to this study, including study design, data acquisition, data analysis, and/or drafting and revision of the manuscript, and all the authors approved the submitted version of the manuscript.

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WHAT'S KNOWN ON THIS SUBJECT: In utero tobacco smoke exposure is associated with childhood asthma, but there are sparse data regarding its effects on asthma severity, especially in Latino and black populations.



WHAT THIS STUDY ADDS: In utero tobacco smoke exposure, but not exposure at other times, is associated with the development of persistent asthma among Latino and black children, which indicates that in utero tobacco smoke exposure has significant consequences for postnatal asthma outcomes.

abstract



BACKGROUND: The effects of in utero tobacco smoke exposure on childhood respiratory health have been investigated, and outcomes have been inconsistent.

OBJECTIVE: To determine if in utero tobacco smoke exposure is associated with childhood persistent asthma in Mexican, Puerto Rican, and black children.

PATIENTS AND METHODS: There were 295 Mexican, Puerto Rican, and black asthmatic children, aged 8 to 16 years, who underwent spirometry, and clinical data were collected from the parents during a standardized interview. The effect of in utero tobacco smoke exposure on the development of persistent asthma and related clinical outcomes was evaluated by logistic regression.

RESULTS: Children with persistent asthma had a higher odds of exposure to in utero tobacco smoke, but not current tobacco smoke, than did children with intermittent asthma (odds ratio [OR]: 3.57; $P = .029$). Tobacco smoke exposure from parents in the first 2 years of life did not alter this association. Furthermore, there were higher odds of in utero tobacco smoke exposure in children experiencing nocturnal symptoms (OR: 2.77; $P = .048$), daily asthma symptoms (OR: 2.73; $P = .046$), and emergency department visits (OR: 3.85; $P = .015$) within the year.

CONCLUSIONS: Exposure to tobacco smoke in utero was significantly associated with persistent asthma among Mexican, Puerto Rican, and black children compared with those with intermittent asthma. These results suggest that smoking cessation during pregnancy may lead to a decrease in the incidence of persistent asthma in these populations. *Pediatrics* 2011;128:e623–e630