

Relationship of Maternal Snuff Use and Cigarette Smoking With Neonatal Apnea

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KEY WORDS

nicotine, prenatal, gestation, exposure, respiration, newborn, smokeless tobacco

ABBREVIATIONS

SIDS—sudden infant death syndrome

NRT—nicotine-replacement therapy

SGA—small for gestational age

Drs Cnattingius and Wickström had the original idea for the study, and all authors contributed to the design of the study; Dr Gunnerbeck performed the analyses under supervision of Drs Wickström and Cnattingius and wrote the first draft of the manuscript; and all authors made substantial contributions to the interpretation of results and manuscript revision.

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WHAT'S KNOWN ON THIS SUBJECT: Maternal smoking is associated with harmful effects on the newborn: preterm birth, fetal growth restriction, and sudden infant death syndrome. Much less is known about the effects of smokeless tobacco, and nicotine-replacement therapy is recommended as a means of smoking cessation during pregnancy.



WHAT THIS STUDY ADDS: Maternal snuff use (including predominantly nicotine) is associated with higher risk of neonatal apnea than smoking (containing nicotine and combustion products). Snuff use should not be regarded as safe during pregnancy.

abstract

FREE

BACKGROUND: Maternal smoking is associated with disturbed cardiorespiratory control in the infant. Despite lacking knowledge of whether the harmful effects of smoking are caused by combustion products in tobacco smoke or by nicotine, it has been argued that nicotine-replacement therapy during pregnancy is safer than smoking.

OBJECTIVE: The goal of this study was to investigate if the disturbances in cardiorespiratory control associated with maternal smoking are also seen in infants prenatally exposed to snuff. We hypothesized that prenatal nicotine exposure (via moist snuff) causes disturbances in autonomic control and thereby increases the risk of apnea in the newborn.

METHODS: In a nationwide Swedish cohort study, we studied associations between maternal tobacco use during pregnancy and neonatal apnea. Of 609 551 live-born singleton infants, 7599 were born to snuff-using mothers, 41 391 and 16 928 were born to light (1–9 cigarettes per day) and heavy (≥ 10 cigarettes per day) smokers, respectively. Logistic regression was used to calculate odds ratios, using 95% confidence intervals.

RESULTS: Compared with infants of nontobacco users, infants with prenatal exposure to snuff were at an increased risk of apnea even after adjustment for differences in gestational age (odds ratio: 1.96 [95% confidence interval: [1.30–2.96]) Smoking was associated with increased risk of apnea before, but not after, adjusting for gestational age.

CONCLUSIONS: Snuff use during pregnancy is associated with a higher risk of neonatal apnea than smoking. Maternal use of snuff or nicotine-replacement therapy cannot be regarded as an alternative to smoking during pregnancy. *Pediatrics* 2011;128:503–509