Obesity and Childhood Asthma: Is There a Relationship?

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Abstract

Increase in the prevalence of both obesity and asthma has been observed in recent years. However, there is a paucity of research on the possible contributing factors to the relationship and the effect of obesity on asthma management outcomes. This study investigates the relationship between obesity and childhood asthma, while controlling for other factors. Logistic regression models were used to test the significance of the relationship between obesity and childhood asthma. Descriptive statistics were calculated from the 2006 North Carolina Child Health Assessment and Monitoring Program (CHAMP) Survey data set for children ages 10-17 for whom BMI could be calculated. Logistic regression models were used to test the significance of the relationship between obesity and childhood asthma, while controlling for physical activity, television watching, and selected demographic characteristics. There were about twice as many children with asthma who were obese than those who were of normal weight. Obesity was significantly related to lifetime asthma and current asthma. The significant relationship was found between obesity and use of daily asthma medication, use of rescue medication, or emergency room/urgent care clinic visit. Although the results indicate a strong relationship between obesity and childhood asthma, further studies, including prospective investigations, are needed to explore the onset timing of these two conditions, as well as explanatory mechanisms or causal processes for the relationship.

Background

“Obesity is associated with a higher prevalence of asthma.”

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“Obese children are six times more likely than children with healthy weights to have an impaired quality of life – equal to that of children undergoing treatment for cancer.”

The authors dedicate this presentation in memory of Janet Reaves.

Conclusions

- There were about twice as many children with asthma who were obese than those who were of normal weight.
- Obesity was significantly related to lifetime asthma and current asthma, even after controlling for physical activity, television watching time, age, gender, and race.
- There was no significant relationship found between obesity and use of daily asthma medication, use of rescue medication, or emergency room/urgent care clinic visits.
- Although the results indicate a strong relationship between obesity and childhood asthma, further studies, including prospective investigations, are needed to explore the onset timing of these two conditions, as well as explanatory mechanisms or causal processes for the relationship.

Methods

Sources of data: 2005 and 2006 North Carolina Child Health Assessment and Monitoring Program (CHAMP) Surveys

Variables of interest:

- Lifetime asthma: lifetime prevalence, current prevalence
- Daily phys. activity: engagement during leisure time (normal-BMI 18.5-24.9, overweight/BMI 25.0-29.9, obese/BMI >30.0)
- Obesity-related outcomes: use of daily asthma medication, use of rescue medication, emergency room/urgent care clinic visits

Analysis:

- Bivariate and multiple logistic regression: to determine prediction of three asthma management behaviors
- Controls: physical activity, television watching time, age, gender, race

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