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**Reduced asthma morbidity in endemic areas for helminth infections: a longitudinal ecological study in Brazil.**

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**Abstract**

**OBJECTIVE:**

The aim of this study was to evaluate whether endemic areas for helminth infections in Brazil have lower rates of hospital admission due to asthma and whether reduction in helminth endemicity impacts on asthma morbidity.

**METHODS:**

This was a country-wide ecological study in Brazil. Government databases were the source of information. A cross-sectional analysis accessed the risk of a municipality having high rates of hospital admissions due to asthma according to its records of hospital admissions due to Schistossoma mansoni or intestinal helminth infections. A longitudinal analysis accessed the effect of prevention of helminth infection on asthma morbidity. Data were adjusted for the rates of hospital admissions due to influenza, pneumonia, diarrhea, per capita income, Gini index, number of physicians, proportion of literate inhabitants, urbanization and hospital beds.

**RESULTS:**

Hospitalization rates due to asthma in the age range of 5-24 years were lower in municipalities endemic for S. mansoni [adjusted OR: 0.992, CI: 0.989-0.994] or for intestinal helminth infections [adjusted OR: 0.994, CI: 0.990-0.997]. Similar results were observed for the age range of 25-64 years. In the longitudinal analysis, municipalities that reduced hospitalizations due to S. mansoni had smaller odds to decrease hospital admissions due to asthma among young populations [adjusted OR: 0.43, CI: 0.22-0.82].

**CONCLUSION:**

We conclude that populations exposed to helminths have lower asthma morbidity. Reduction of helminth infection prevalence in low-income populations was associated with a smaller decline in asthma morbidity.

**KEYWORDS:**

Asthma; hospitalization; morbidity; public health; schistossoma mansoni