

age of 7 years, and only 7.6% continued to be symptomatic at 18 years. In 6.7% of the participants asthma symptoms appeared between 7 and 18 years of age (late-onset asthma). In almost half (48.2%) of these children symptoms were persisting at the age of 18 years.

CONCLUSIONS: These findings illustrate that asthma remains a significant health care problem for Greek children and adolescents. Continued surveillance of asthma prevalence and its longitudinal predictors is necessary to assist health care professionals with adequately informing children and their parents on the course of the disease.

CONGENITAL MALFORMATIONS ASSOCIATED WITH PESTICIDES IN ENCARNACIÓN, PARAGUAY

Submitted by Stela Benitez Leite

Stela Benítez Leite^a, Marta Acosta^b, María Luisa Macchi^a
^aFaculty of Medical Sciences, National University of Asunción, Asunción, Paraguay; ^bRegional Hospital of Encarnación, Itapúa, Paraguay

INTRODUCTION: Exposure to pesticides is a known risk to human health. The association between parental exposure and congenital malformations is described.

OBJECTIVE: We sought to study the association between exposure to pesticides and congenital malformations in newborns who were born at the Regional Hospital of Encarnación in Itapúa, Paraguay.

METHODS: This was a prospective case and control study from March 2006 to February 2007. A case was defined as a newborn who was born with congenital malformations, and a control case was defined as a newborn of the same gender who was born immediately after and was found to be healthy. The exposure to pesticides was considered along with other risk factors that are known to cause congenital malformations.

RESULTS: The cases (52) and controls (87) were analyzed. The average number of births per month was 216. The risk factors that were significantly associated were living near fumigated fields (odds ratio [OR]: 2.46 [95% confidence interval (CI): 1.09–5.57]; $P < .02$), having pesticides in the house (OR: 15, 35 [95% CI: 1.96–701.63]; $P < .003$), direct or accidental contact with pesticides (OR: 3.19 [95% CI: 0.97–11.4]; $P < .04$), and history of family malformations (OR: 6.81 [95% CI: 1.94–30.56]; $P < .001$). The other risk factors known to cause malformations did not have statistical significance.

CONCLUSIONS: The results show an association between the exposure to pesticides and congenital malformation in newborns who were born at the Regional Hospital of Encarnación. Future studies are required to confirm these findings.

THE GLOBAL BURDEN OF CHILDHOOD OTITIS MEDIA AND HEARING IMPAIRMENT: A SYSTEMATIC REVIEW

Submitted by Hasantha Gunasekera

Hasantha Gunasekera^a, Leigh Haysom^a, Peter Morris^b, Jonathan Craig^c

^aChildren's Hospital at Westmead, Sydney, Australia;

^bMenzies School of Health Research, Darwin, Australia;

^cSchool of Public Health, University of Sydney, Sydney, Australia

INTRODUCTION: The World Health Organization resolved that chronic otitis media and resultant hearing impairment are significant global health problems and called for more detailed epidemiological information, particularly the association between prevalence and socioeconomic variables.

OBJECTIVE: We sought to determine the worldwide prevalence of otitis media (OM) and hearing impairment (HI) and their risk factors.

METHODS: We searched Medline, Embase, and Cinahl for population-based studies with incidence or prevalence data on OM and HI (>25 dB) in children (<18 years), without language restrictions. Studies identified through reference lists were also included. We examined the effect of socioeconomic and health variables on OM and HI prevalence.

RESULTS: The search strategy identified 1504 studies with substantial methodologic variation. They included studies ($n = 108$) that provided a combined sample size of 250 978 children. Acute OM incidence ranged from 0.6 to 1.7 episodes per child per year. The highest OM prevalence rates were in Inuits (81%) and Australian Aborigines (84%). HI prevalence ranged from <1% (Greece) to 23% (Australian Aborigines), and HI was significantly more common in children with OM (odds ratio [OR]: 8.11 [95% confidence interval (CI): 6.91–9.52]). In meta-analysis, increased OM prevalence was associated with not breastfeeding (OR: 1.28 [95% CI: 1.03–1.59]) and parental smoking (OR: 1.73 [95% CI: 1.42–2.10]), but male gender (OR: 1.04 [95% CI: 0.90–1.20]) and urbanization (OR: 0.72 [95% CI: 0.28–1.83]) were not significant. Some studies reported increased OM prevalence with overcrowding, lower maternal education, and poorer household sanitation.

CONCLUSIONS: Indigenous children have the highest prevalence of OM and its complications. OM remains a significant cause of preventable childhood HI, and many of the risk factors are modifiable.

HUMAN BOCAVIRUS IN GREEK CHILDREN WITH RESPIRATORY TRACT INFECTION

Submitted by Katerina Haidopoulou

**CONGENITAL MALFORMATIONS ASSOCIATED WITH PESTICIDES IN
ENCARNACIÓN, PARAGUAY**

Stela Benítez Leite, Marta Acosta and María Luisa Macchi

Pediatrics 2008;121;S107

DOI: 10.1542/peds.2007-2022PP

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