

Otitis media and early development in a high risk pediatric population
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BACKGROUND:

Otitis media (OM) is the most common acute pediatric diagnosis, primarily affecting children during the first 36 months of life. Studies of the potential impact of recurrent OM on speech-language development have had mixed results. Sometimes delays are identified in children otherwise at risk, and confounding variables make it difficult to ascribe developmental status to OM history. Other studies suggest that the potential developmental impact of OM is mediated by environmental factors such as language stimulation. Homeless children are at high risk of developmental delay, with studies suggesting as many as 75% will present speech-language and academic delays.

OBJECTIVES:

This study seeks to help resolve conflicting research findings by exploring the impact of otitis media on speech-language development in a homogeneously high-risk population, homeless children.

DESIGN/METHODS:

All data were collected by retrospective chart review of homeless primary care patients of the New York Children's Health Project, a service of The Children's Health Fund. Behavioral health data were derived from 267 consecutive psychological assessments of patients referred by their primary care provider during a two-year period, 1998-99. Developmental diagnoses were made by a licensed clinical child psychologist using ICD-9 and DSM-IV criteria. Otitis media was diagnosed by pediatricians and pediatric nurse practitioners consistent with ICD-9 criteria. Diagnostic procedures included otoscopy, when possible supplemented by tympanometry. For comparison, we referenced our contemporaneous retrospective chart review of health conditions in a representative random sample of 200 pediatric patients in the same pediatric practice.

RESULTS:

Behavioral health sample: mean age, 59 months (range, 2 months to 17 years 5 months; 62% were ≤ 60 months and 29% were ≤ 36 months). There were more boys in the referred than control group (64% to 51%; $p < 0.05$) Race-ethnicity

(60% African-American, 40% Latino) and SES (100% at or below poverty) were consistent in both groups. All of the referred children met criteria for a behavioral health diagnosis, subsequently confirmed by established eligibility for services under IDEA (Early Intervention, preschool or school-age special education).

Otitis media in the referred population was 45.3% (mean age, 47 months) compared with 29% in the control group ($p < 0.01$). For children ≤ 36 months, otitis media was diagnosed in 61.5% of referred patients compared with 38% in the control group ($p < 0.05$). Neither lead intoxication nor iron deficiency anemia was a significant co-morbidity in the referred population. Exposure to domestic violence was 28.5% in both groups.

CONCLUSION:

In this population of homeless high-risk children, there was an association between otitis media and a diagnosed developmental condition. This is consistent with studies that suggest environmental factors may mediate the potentially negative developmental impact of otitis media. Our findings suggest that otitis media – or perhaps more precisely the fluctuating hearing loss that accompanies middle ear effusion associated with otitis media – is better viewed as a risk factor than a cause of delayed development. Our findings underline the importance of developmental screening for high risk pediatric patients with a history of recurrent otitis media, and suggest that early intervention and/or language stimulation programs may improve speech-language outcomes.

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