

# Differences in the treatment of otitis media in children between ENT specialists and pediatricians

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## Background

- Acute otitis media (AOM) is one of the most common inflammatory diseases in childhood.
- An AOM diagnosis is also one of the most common reasons for antibiotic therapy, with amoxicillin being the antibiotic of first choice.
- However, the routine use of antibiotics in children has been controversial for years.

## Research questions

- What proportion of children diagnosed with otitis media are prescribed antibiotics on the day the diagnosis is made?
- How does this proportion differ among ENT specialists and pediatricians?

## Methods

- Children between the ages of 1 and 10 who received a confirmed diagnosis of acute otitis media (ICD-10: H65.0, H65.1 (nonsuppurative otitis media), H66.0 (suppurative otitis media)) from an ENT specialist (ENT) or pediatrician (PD) between January 1, 2015 and December 31, 2017 were selected from the Disease Analyzer database (IQVIA)<sup>1,2</sup>.
- The proportion of children who received a prescription for an antibiotic on the day of their initial diagnosis was determined.
- The impact of specialist group, age, sex, and type of diagnosis (suppurative, serous, nonsuppurative) on physicians' prescription behavior was determined using multivariate logistic regression.

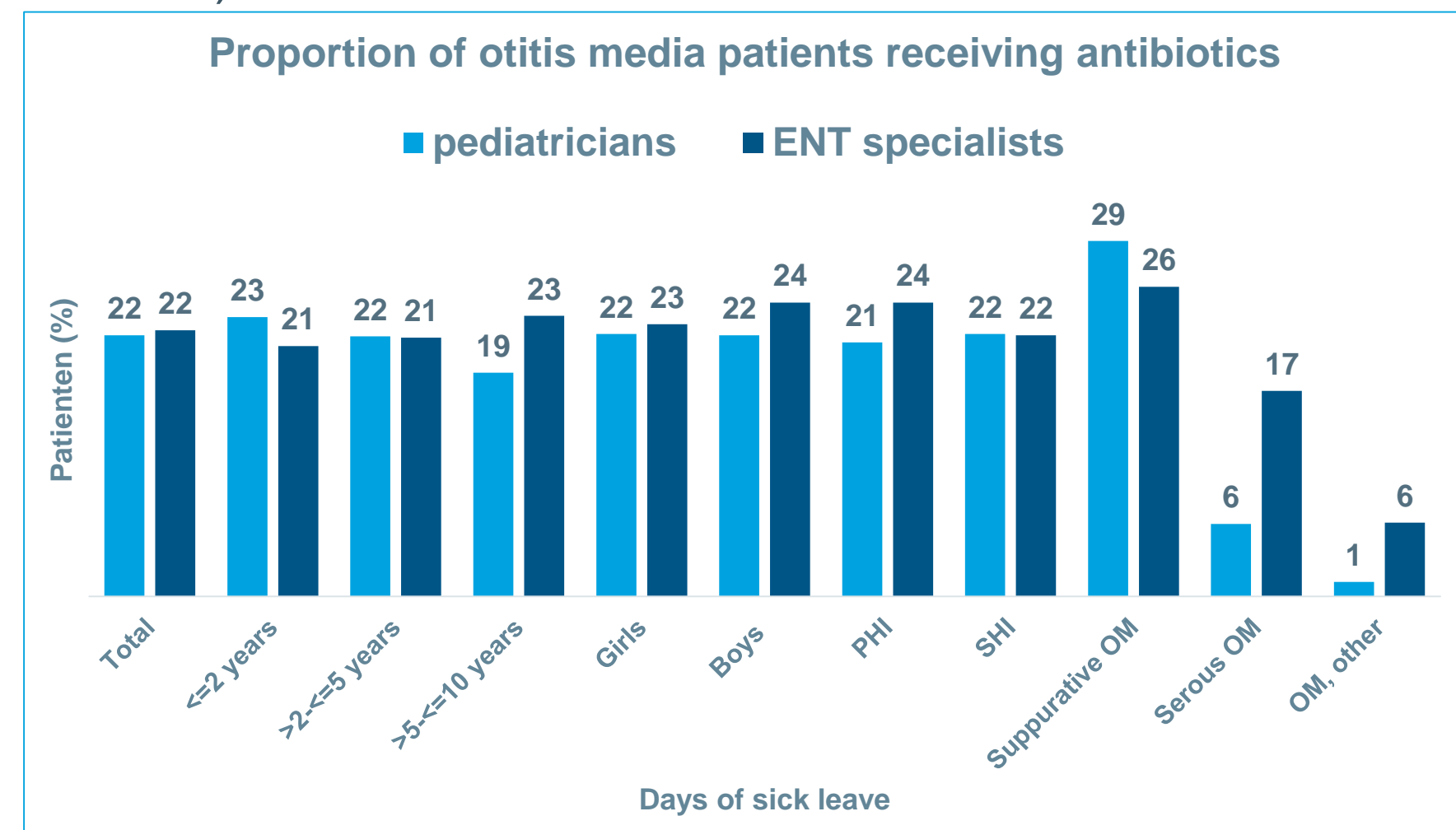
The Disease Analyzer database grants anonymous access to a selected panel of medical practices and patients. The data are transmitted by the practice computers via standardized interfaces and provide routine information about the illnesses and therapies of the patients. The patient data stored in the practice computers are transferred to IQVIA on a monthly basis. Prior to transmission, the data are encrypted for data protection purposes and contain information similar in quantity and detail to that in the patient files in the practices. Patients and practices can be analyzed in cross section or longitudinally. The database contains data on more than 2,000 practices and over 20 million patients in Germany. In addition to the data collected from general practices and specialist practices for internal medicine, the database also includes information gathered from various specialist groups in Germany. The database contains only anonymized data in accordance with applicable data protection laws.

## Sources

- 1- Rathmann W, Bongaerts B, Carius HJ, Kruppert Y, Kostev K. Basic Characteristics and Representativeness of the German Disease Analyzer Database. *Int J Clin Pharmacol Ther.* 2018 Oct;56(10):459-466
- 2- Dombrowski S, Kostev K. Use of Electronic Medical Records in the Epidemiological Research. Göttingen: Cuvillier Verlag 2017. ISBN 978-3-736995-00-0

## Results

- A total of 3,727 children in 119 ENT practices (~20 children per physician) and 11,105 children in 216 pediatric practices (~51 children per physician) were available for analysis.
- There was no significant difference in the proportions of children who received antibiotic prescriptions from ENT specialists versus pediatricians (22.0% versus 21.6%).



- Both ENTs and PDs most frequently prescribed amoxicillin, followed by cefaclor.
- In the regression model, suppurative otitis media (OR: 13.8; p<0.001), serous otitis media (OR: 3.2, p<0.001), and age ≤ 2 years (OR: 1.2; p<0.001) were associated with antibiotic prescriptions.

### Association between defined variables and antibiotic prescription

Variable	OR (95% CI)	P-value
Age ≤2 (reference: >5-10)	1.15 (1.03-1.28)	0.011
Age >2-5 (reference: >5-10)	1.06 (0.95-1.18)	0.303
Boys (reference: girls)	0.99 (0.92-1.08)	0.873
PHI (reference: SHI)	1.01 (0.88-1.15)	0.918
ENT specialists (reference: pediatricians)	1.04 (0.94-1.14)	0.431
suppurative otitis media (reference: otitis media, other)	13.82 (6.70-19.69)	<0.001
serous otitis media (reference: otitis media, other)	3.18 (2.19-4.61)	<0.001

## Conclusions

- Pediatricians and ENT specialists equally frequently prescribe antibiotics to children with otitis media immediately upon diagnosis.
- There is no difference between the two groups of specialists in their choice of active ingredients.
- Antibiotic prescriptions were particularly common in children with suppurative otitis media and in young children (< 2 years), which is in line with the guideline recommendations.
- Additional studies should be conducted on the use of antibiotics in children with infectious diseases.