

Clin Infect Dis. 2008 Jun 1;46(11):1664-72.

Changing Epidemiology of Pneumococcal Meningitis After the Introduction of Pneumococcal Conjugate Vaccine in the United States.

Tsai CJ, Griffin MR, Nuorti JP, Grijalva CG

Department of Preventive Medicine, Vanderbilt University School of Medicine, Nashville, Tennessee 37212, USA.

BACKGROUND: Although hospitalizations due to invasive pneumococcal disease decreased after routine vaccination of young children with a 7-valent pneumococcal conjugate vaccine (PCV7) began in 2000, information on the trends in pneumococcal meningitis is limited.

METHODS: We estimated national trends in rates of hospitalization for pneumococcal meningitis, using data from the Nationwide Inpatient Sample, 1994-2004. Pneumococcal meningitis cases and deaths were identified on the basis of the International Classification of Diseases, Ninth Edition, Clinical Modification coded primary discharge diagnosis, and rates were calculated using US Census data as denominators. The year 2000 was considered to be a transition year, and the average annualized rate after PCV7 introduction (2001-2004) was compared with that during the baseline years (1994-1999).

RESULTS: During 1994-2004, there were 21,396 hospitalizations and 2684 deaths (12.5%) due to pneumococcal meningitis in the United States. In children aged < 2 years, the average annualized rates of pneumococcal meningitis hospitalizations per 100,000 population decreased from 7.7 in 1994-1999 to 2.6 in 2001-2004 (change, -66.0%; 95% confidence interval [CI], -73.5% to -56.3%). Among children aged 2-4 years, the hospitalization rate decreased from 0.9 to 0.5 per 100,000 (change, -51.5%; 95% CI, -66.9% to -28.9%). Average rates also decreased by 33.0% (95% CI, -43.4% to -20.9%) among adults aged > or = 65 years. After PCV7 introduction (2001-2004), an estimated 1822 and 573 pneumococcal meningitis hospitalizations were prevented in persons aged < 5 years and > or = 65 years, respectively. Overall, an estimated 3330 pneumococcal meningitis hospitalizations and 394 deaths were prevented in persons of all ages during 2001-2004 in the United States.

CONCLUSION: After implementation of routine childhood vaccination with PCV7, hospitalizations for pneumococcal meningitis decreased significantly for both children and adults. Most pneumococcal meningitis cases now occur among adults.

PMID: 18433334 [PubMed - indexed for MEDLINE]