ACQUISITION AND CLEARANCE OF PNEUMOCOCCAL SEROTYPES IN NATURALLY-COLONISED PCV-EXPOSED GAMBIAN INFANTS (ID 990)

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Abstract

Background

Pneumococcal carriage influences population-wide strain dynamics, but limited data exist on serotype-specific temporal carriage patterns among PCV-vaccinated West African infants.

Methods

Pneumococcus was cultured from nasopharyngeal swabs (n=1, 595) collected from 102 PCV7-exposed infants followed up from birth to 12 months. Serotyping was performed by whole genome sequencing and sweep-latex agglutination. Parametric survival models with constant hazard rates were fitted to estimate carriage dynamics (duration, clearance and acquisition).

Results

The infants were naturally colonised with 60 pneumococcal serotypes with a mean of 7 (range:2-11) serotypes per infant. Carriage dynamics estimates for serotypes 5, 7F, 39, 9A, and 12F are provided here for the first time in infants. There was no correlation between time to first acquisition and carriage duration (ρ=0.06, P=0.709). Serotype prevalence showed a weak correlation with initial acquisition (ρ=0.07, P=0.706), carriage duration (ρ=0.219, P=0.194), and reacquisition times (ρ=0.09, P=0.730). Onset of initial acquisition was longer than the time taken to reacquire serotypes (median: 136.23 vs 26.15 days, P=7.63×10-6). Overall, serotype-specific carriage durations after initial acquisition and reacquisition were significantly different (P=0.020), varying by serotype.

Conclusions

Pneumococcal carriage dynamics among Gambian infants are complex and highly variable by serotype which may have important implications for transmission and invasive disease.