DELINEATING THE PERTURBATION BY PCV13 IN COMPOSITION OF STREPTOCOCCUS PNEUMONIAE CARRIAGE ISOLATES IN CAMBODIA (ID 1159)

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Abstract

Background

We sought to elucidate the perturbation by PCV13 to the Streptococcus pneumoniae strain and serotype composition in Cambodian carriage isolates.

Methods

Pre-PCV13 (01/2013–12/2015, N=258) and the post-PCV13 isolates (01/2016-02/2017, N=432) were sequenced and analysed using PopPUNK(https://github.com/johnlees/PopPUNK) and SeroBA (https://github.com/sanger-pathogens/seroba) to determine strain prevalence and serotype composition.

Results

PCV13 serotypes significantly decreased by Fisher's exact test (p=0.003[95% Confidence interval 0.45-0.85], OR 0.62) while non-PCV13 serotype significantly increased(p=0.002[1.18-2.26], OR 1.64) in the post-PCV13 populations. There was a significant increase in Simpsons diversity index for both serotype (Welch's t-test p=0.0059) and strain (p=0.0228) in the post PCV13 population. The isolates were comprised of 44 unique serotypes with 27 pre-PCV and 32 post-PCV13. Significant changes in prevalence were detected in the post-PCV13 populations of serotypes 19F (N=52, 98.1% GPSC1; p=0.02[0.26-0.89], OR 0.48), 23A (N=27, 96.3% GPSC626; p=0.03 [1.04-9.69], OR 2.84), 34 (N=25, 100% GPSC45; p=0.01 [1.35-24], OR 4.55), and 6D (N=8, 87.5% GPSC16; p=0.03[1.19-Inf], OR Inf).

Conclusions

The strain population in Cambodia has been perturbed by the vaccine but had not yet reached equilibrium 24 months following PCV13 introduction. Additional isolate collection is ongoing for detection of trends towards equilibrium post-PCV13 in this population.