

Childhood pneumococcal disease epidemiology at Patan Hospital, Nepal 2005–2015: invasive disease and serotype distribution

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INTRODUCTION

- The diversity of invasive pneumococcal serotypes has significant geographic variation.
- Accurate depiction of this spectrum and its distribution according to age is integral to maximizing the impact of pneumococcal conjugate vaccines in specific settings.

METHODS

- With funding initially from PneumoADIP and subsequently through the World Health Organisation, an on-going programme of enhanced pneumococcal disease surveillance is being conducted at Patan Hospital, Kathmandu, Nepal.
- Invasive pneumococcal disease isolates cultured from sterile body sites of children up to 14 years of age, presenting to the hospital underwent molecular serotyping by PCR.

RESULTS

- Between April 2005 and November 2015, pneumococcus was identified in 123 of 13367 body fluid specimens available for analysis in our database; 109 (88.6%) patients had pneumococcus detected in blood culture.
- The most prevalent serotypes of the 112 isolates that had been serotyped were 1 (44.6%), 5 (12.5%) and 14 (4.5%); 72.3% isolates were PCV10 serotypes.
- Of the pneumococcal serotypes, 60.7% (68/112) were from those under 5 years of age, while 17% (19/112) were from those under 9 months of age. Only 8 of the serotypes from the 19 isolates from patients under 9 months of age (42.1%) would be covered by the PCV10 vaccine.

Serotype distribution of invasive pneumococcal disease in Nepalese children

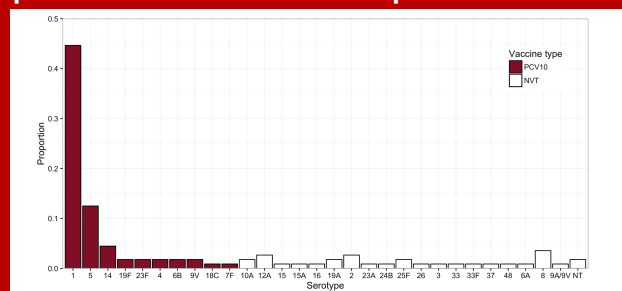


Figure 1. Serotype distribution of invasive pneumococcal disease in Nepalese children presenting to Patan Hospital, Kathmandu prior to PCV10 introduction.

Age distribution of invasive pneumococcal disease in Nepalese children

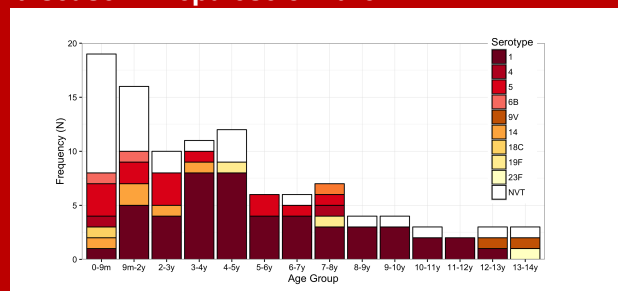


Figure 2. Age distribution of invasive pneumococcal disease in Nepalese children presenting to Patan Hospital, Kathmandu prior to PCV10 introduction.

Temporal distribution of invasive pneumococcal disease in Nepalese children

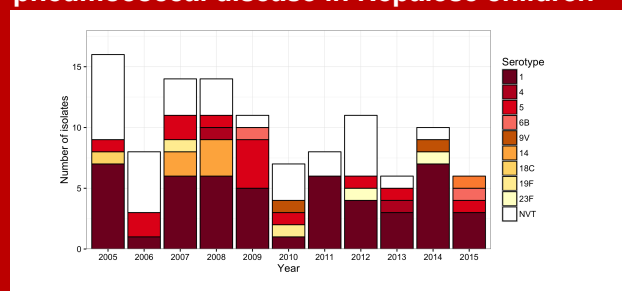


Figure 3. Temporal distribution of IPD isolates in Nepalese children from Patan Hospital Kathmandu.

CONCLUSION

- The majority of IPD isolates from Patan Hospital were serotypes that are included in PCV10 or PCV13.
- Pneumococcal bacteraemia was seen predominantly post-infancy, indicating that a schedule including a booster dose of a pneumococcal vaccine in late infancy may provide optimal protection through early childhood.

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