

#01486

Dynamic Trends in Serotypes and Antimicrobial Resistance of *S. pneumoniae* in Argentine Pediatrics: Insights from 2018 to 2022.

O3. Bacterial susceptibility & resistance

O3a. Resistance surveillance & epidemiology: MRSA, VRE & other Gram-positives

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Background

Streptococcus pneumoniae (Spn) is a major human pathogen causing infections in children under five years of age and elderly. We describe the epidemiology of invasive pneumococcal diseases (IPD) in children stratified by cases caused by PCV13 versus non-PCV13 serotypes.

Methods

A total of 1,288 IPD cases occurred from January 2018 to December 2022 were submitted from 153 hospitals of 20 provinces to the National Reference Laboratories. The periods before and after 2020 were compared: 2018-2019 (pre) and 2021-2022 (post). Two age groups were analyzed, <2 years (n=152 pre, n=96 post) and 2-5 years (n=145 pre, n=120 post). The isolates were serotyped by Quellung reaction and MICs were determined by agar dilution method (CLSI2023).

Results

Serotype distribution across the two time periods are depicted in Figure1 and percentage of antimicrobial non-susceptibility (NS) in Figure2. No significant differences in antimicrobial resistance were observed between pre- and post-data across all age groups. Multidrug resistance (defined as NS to PEN+TET+ERY/TMS) was found in 20% of cases, primarily associated with serotypes 24F, 19A, 24A, and 24B (82%). Moreover, 70% of Spn serotype 3 presented susceptibility to penicillin and resistance to tetracycline/doxycycline. All Spn strains were susceptible to chloramphenicol, levofloxacin, rifampicin, vancomycin, ceftaroline, and ceftobiprole.

Conclusions

After 2020, the prevalent serotypes were 3, 19A, 23B, 24F, 8 and 15B in

all ages, and 15A only in 2-5 years. Serotypes 3 and 24F were prevalent in both

periods. Serotype 19A increased in both groups of age and serotype 3 only in children aged 2-5 years. PCV13 serotypes increased in the post period in <2 years, which could in part be due to decrease in vaccine coverage since 2020. There were no differences in antimicrobial resistance in both periods. PEN and AMX continue to be the treatment of choice for pneumonia and 3rd generation cephalosporins for meningitis. Continuous surveillance is crucial to evaluate changes in the distribution of circulating serotypes and define the empirical treatments.

Figures

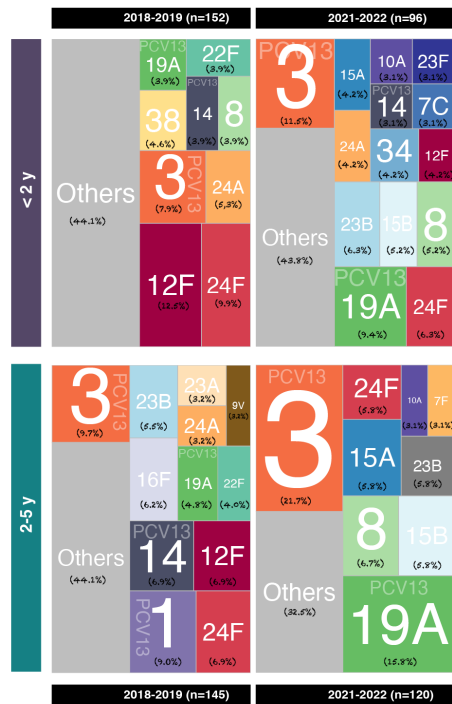


Figure 1. Serotype distributions across the specified time periods.

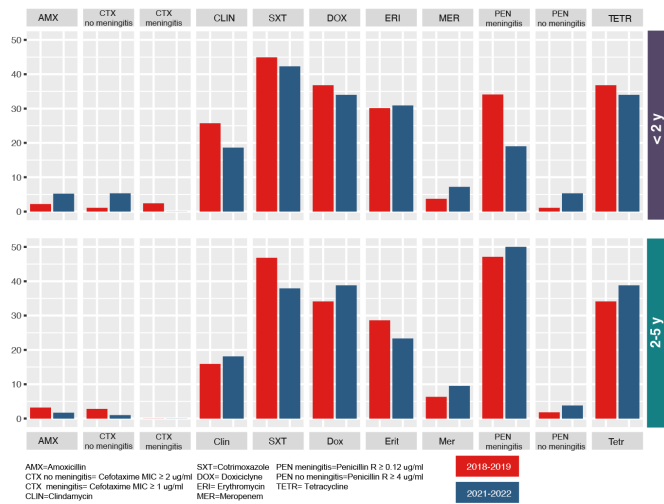


Figure 2. Percentage of not susceptibility (Intermediate + Resistant).