Streptococcus pneumoniae serotypes 3 and 19A are the main cause of Invasive Pneumococcal Disease (IPD) in adults in Bogotá, Colombia.

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Background

Incidence of Invasive pneumococcal disease (IPD) depends on numerous factors, including vaccine undertake, geographic location, and serotype prevalence. There is limited data about the incidence of Streptococcus pneumoniae (Spn), serotype distribution, and clinical characteristics of adults hospitalized due to IPD in Colombia. Thus, this study will attempt to bridge this gap in the literature.

Methods

This is an observational, retrospective, citywide study conducted between 2012 and 2019 in Bogotá, Colombia. We analyzed, reported positive cases of IPD. Importantly, Bogotá represents approximately 75% of the Colombian population. Strains were isolated in each hospital and typified in a centralized laboratory. The objectives included assessment of Spn serotype distribution, clinical diagnosis, mortality, ICU admission, and need for mechanical ventilation

Results

A total of 310 patients with IPD were included, 45.5% were female. The leading cause of IPD was pneumonia (60%, 186/310), followed by meningitis. The most prevalent isolated serotypes were 19A (13.87%, 43/310) and 3 (11.94%, 37/310). The overall hospital mortality rate was 30.3% (94/310). Moreover, 52.6% (163/310) were admitted to the ICU, 45.5% (141/310) required invasive mechanical ventilation and 5.1% (16/310) non-invasive mechanical ventilation.

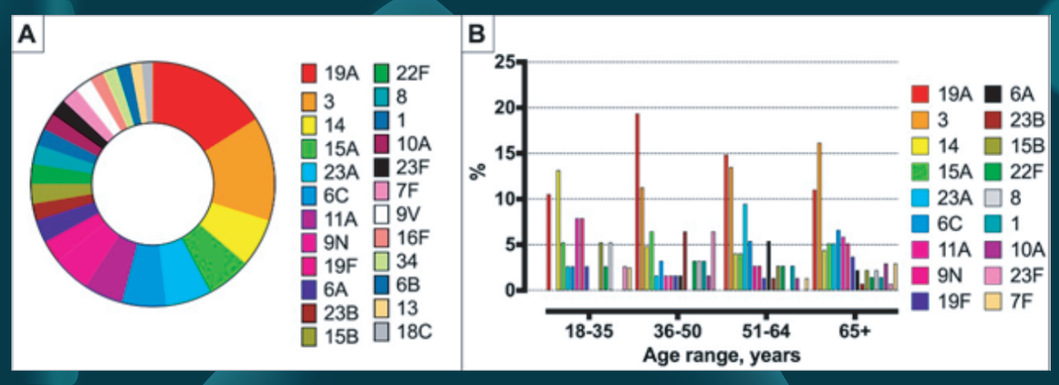

Figure 1. Pneumococcal **serotype distribution** of Streptococcus pneumoniae (Spn) **[A]** and epidemiological arrangement of S. pneumoniae serotype **isolated by age range**, 18-35, 36-50, 51-64 and ≥ 65 years old recovered in adult patients in Bogotá, Colombia **[B].** S. pneumoniae (Spn) serotype 19A was the most prevalent among adult patients followed by 3 and 14 [A]. Percentage of general distribution of invasive pneumococcal disease (IPD) in age range.

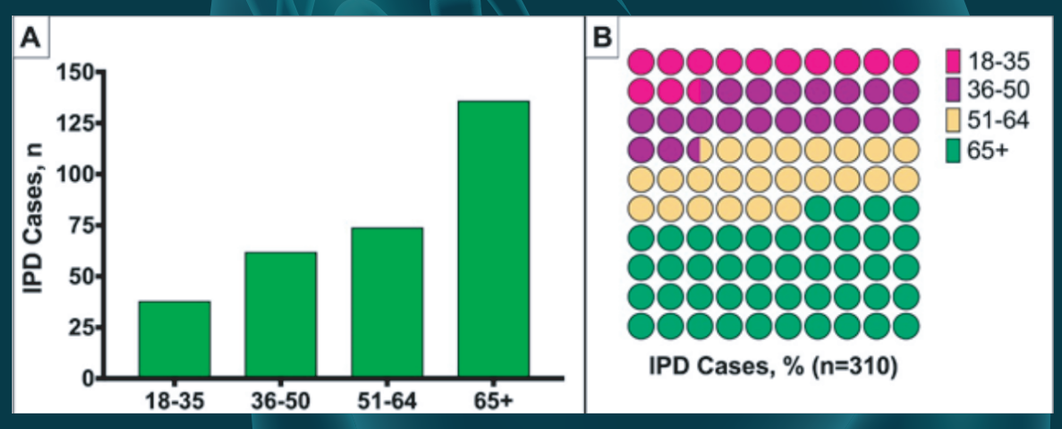

Figure 2. General distribution of invasive pneumococcal disease (IPD) by age groups, 18-35,36-50,51-64 and ≥ 65 years old recovered in adult patients in Bogotá, Colombia. Bar graph showing an absolute number distribution **[A]** and **[B]** showing percentage distribution. Pink circles age ranges from 18-35, with a total of 12.5% of IPD cases, purple circles 36-50 with 20% of IPD cases, yellow circles 51-64 with a total of 23.5% of IPD cases and green circles age ≥ 65 years, being the most affected group with a total of 44% of the cases.

Conclusions

Pneumococcal pneumonia continues to be the most prevalent cause of IPD. Serotypes 19A and 3 are the leading cause of IPD in Colombian adults.

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