EPH35

Patient Characteristics and Healthcare Resource Utilization Associated With Serotype 3 and Emerging Serotype 15A Pneumococcal Disease in Hong Kong From 2007 to 2024

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Background

- Surveillance data from Hong Kong indicate a persistently high incidence of serotype (ST) 3–associated invasive pneumococcal disease (PD) in the general population, despite the coverage for ST3 in existing pneumococcal vaccines since 2011[1]
- While ST3 remains the predominant ST, ST15A has also emerged as 1 of the top 3 most common STs[1]
- This study aimed to describe patient characteristics and healthcare resource utilization (HCRU) associated with ST3 and ST15A PD in Hong Kong

Methods

- Data of eligible patients hospitalized between 1 January 2007 and 31 December 2024 and with laboratory confirmation of ST3 or ST15A PD were extracted from Hong Kong Clinical Data Analysis and Reporting System and Laboratory Information System of the Hospital Authority
- As the unit of analysis was a distinct hospitalization episode of laboratory-confirmed PD, a single patient could contribute 1 or more PD episodes during the study period
- PD episodes in this study included invasive PD, nonbacteremic pneumococcal pneumonia, and acute otitis media, and were identified using International Classification of Disease codes
- The components of HCRU included inpatient and intensive care unit (ICU) length of stay (LOS), number of inpatient and ICU admissions, and number of outpatient and emergency department (ED) visits
- Study findings were summarized using descriptive statistics

Results

- 206 ST3 and 20 ST15A PD episodes were identified
- Males accounted for approximately 57% of ST3 episodes and 60% of ST15A episodes (**Table 1**)
- The majority of ST3 and ST15A episodes occurred in adults (aged ≥18 years) (**Table 1**)
- At hospitalization, comorbidities were reported in about one-third of ST3 cases and nearly half of ST15A cases (**Table 1**)
- Chronic lung disease, chronic heart disease, and diabetes mellitus were among the most frequently reported comorbidities
- Nonbacteremic pneumococcal pneumonia and bacteremic pneumococcal pneumonia accounted for 47% and 44% of ST3 episodes, respectively (**Table 1**). The corresponding proportions for ST15A episodes were 35% and 25%, respectively

Table 1. Clinical characteristics associated with ST3 and ST15A episodes

	ST3 n=206	ST15A n=20
Male, n (%)	117 (56.8)	12 (60.0)
Age ≥18 years, n (%)	155 (75.2)	12 (60.0)
Presence of any comorbidities, n (%)	65 (31.6)	9 (45.0)
Chronic heart disease	17 (8.3)	*
Chronic lung disease	21 (10.2)	*
Diabetes mellitus	16 (7.8)	*
Clinical syndrome		
Invasive PD, n (%)	108 (52.4)	12 (60.0)
Bacteremia/septicemia	12 (5.8)	*
Meningitis	*	*
Bacteremic pneumonia	91 (44.2)	5 (25.0)
Other invasive PD conditions	*	*
Nonbacteremic pneumococcal pneumonia, n (%)	96 (46.6)	7 (35.0)
Acute otitis media, n (%)	*	*

*Count <5 is not reported to protect patient confidentiality.

Table 2. HCRU associated with ST3 and ST15A episodes

	ST3 n=206	ST15A n=20
Inpatient		
Number of visits, n	220	21
Total length of hospitalization, days	5,159	482
Median length of hospitalization per visit, days (Q1, Q3)	17.0 (8.0, 31.0)	16.0 (7.5, 35.5)
ICU		
Number of admissions, n	86	*
Total length of ICU stay, days	1,341	9
Median length of ICU stay, days (Q1, Q3)	10.5 (5.0, 20.0)	4.5 (4.0, 5.0)
Outpatient		
Number of visits, n	775	101
ED		
Number of visits, n	247	22

*Count <5 is not reported to protect patient confidentiality. Q1, 25th percentile; Q3, 75th percentile.

- The median length of hospitalization per visit for ST3 and ST15A episodes was 17.0 days and 16.0 days, respectively (**Table 2**)
- Approximately 42% of ST3 episodes involved ICU admission, with a median LOS of 10.5 days, while <5 ST15A episodes required ICU admission, with a median LOS of 4.5 days (**Table 2**)

Conclusions

- HCRU associated with ST3 and ST15A PD episodes remains substantial
- As most episodes occurred in adults, strategies that improve direct protection, particularly among older adults and other high-risk populations, may be important to further reduce the residual burden of PD

References

1. Pang CWK, et al. *J Infect.* 2024;89(1):106178.

Disclosures

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