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INTRODUCTION

• Community-acquired pneumonia (CAP) is associated with considerable morbidity and mortality and cost in the United States (US)/
• Cost of hospitalization for CAP is estimated at $40.9 billion annually;
• Treatment guidelines from the Infectious Diseases Society of America (IDSA) and American Thoracic Society recommend empiric treatment targeted to likely pathogens based on epidemiologic risk factors
• Hospital-based operational records from IQVIA hospital charge data master (CDM)

OBJECTIVE

• To retrospectively study adults (≥18 years) hospitalized with CAP in the hospital setting over the 1-year follow-up (Jan 1, 2012–Dec 31, 2016); first admission termed the “index date”

METHODS

Study Design

• Retrospective cohort study using linked administrative claims and hospital data

Data Sources

• IQVIA-Real-World Data Adjusted Claims – US Database (PMX7)
  – Adjusted longitudinal medical and pharmacy claims for ≥150 million enrollees, representative of the US commercially-insured population
• IQVIA hospital charge data master (CDM)
  – Hospital-based operational records from ≥450 US hospitals

Patient Selection

• Adult patients (≥18 years) were identified in CDM with CAP in a retrospective cohort hospitalization between 1/1/2012 and 12/31/2016, if hospitalization between 1/1/2012 and 12/31/2016; first admission termed the “index date”
• CAP-related hospitalization defined by an admitting or principal diagnosis of CAP or ≥2 secondary diagnoses of CAP if the primary diagnosis was for a repair or respiratory failure
• CAP diagnosis code included diagnoses for pneumonia caused by bacterial, viral, and undefined etiologies, but did not include ventilation-associated pneumonia
• Patients were treated with EM or EC and had continuous health plan enrollment (≥2) 180 days pre–index (baseline) and 360 days post-index (Follow-up)

RESULTS

• The cohort comprised 1,674 patients (Figure 1, Table 1), of whom 75.2% were treated with EC
• CAP patients were generally similar; however, more EM patients had baseline respiratory tract infection (39.5% vs. 26.1%, p<0.0001)

Table 1. Baseline Patient Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Overall (n, %)</th>
<th>EM (n, %)</th>
<th>EC (n, %)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD) age, y</td>
<td>53.3 (17.2)</td>
<td>53.2 (17.0)</td>
<td>53.4 (17.3)</td>
<td>0.92</td>
</tr>
<tr>
<td>Female (n, %)</td>
<td>853 (92.9)</td>
<td>478 (95.1)</td>
<td>375 (89.1)</td>
<td>0.008</td>
</tr>
<tr>
<td>Geographic region (n, %)</td>
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<td></td>
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<tr>
<td>Northeast</td>
<td>246 (26.8)</td>
<td>120 (21.8)</td>
<td>126 (30.2)</td>
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<tr>
<td>Midwest</td>
<td>387 (41.1)</td>
<td>214 (38.4)</td>
<td>173 (40.4)</td>
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</tr>
<tr>
<td>South</td>
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<td>648 (120.7)</td>
<td>336 (76.8)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Mean (SD) CCI</td>
<td>5.4 (4.3)</td>
<td>5.6 (4.3)</td>
<td>5.2 (4.3)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Mean (SD) total pre-index cost</td>
<td>$17,394 (26,485)</td>
<td>$18,808 (28,386)</td>
<td>$15,986 (23,586)</td>
<td>0.0001</td>
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<td>Mean (SD) all-cause cost</td>
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Study Measures

• Baseline demographic and clinical characteristics in the 6-month pre-index and characteristics of the index hospitalization
• All-cause and CAP-related HCRU and costs over the 1-year follow-up
• Comparison of baseline characteristics and HCRU among patients with a CAP diagnosis, or CAP-related therapy claims
• HCRU and cost calculated on a per patient basis, averaged across the cohort
• Cost (adjusted amount) converted to 2017 US dollars using the medical component of the Consumer Price Index

Analyses

• Descriptive summary statistics
• Frequency of categorical variables
• Mean, standard deviation (SD) and median for continuous and discrete variables
• Unadjusted statistical comparisons between EM and EC using the patients’ test and chi-square test
• Generalized linear models (GLMs) to calculate adjusted mean all-cause costs

• Baseline characteristics included in the model a stepwise approach (p≤0.10 for inclusion and retention)

CONCLUSIONS

• Patients hospitalized for CAP incurred significant costs over the 1-year follow-up in both unadjusted and adjusted analyses
• A third (34%) of the total cost was specific to CAP
• The primary cost driver was inpatient care, which accounted for more than half (56%) of total all-cause costs and 94% of CAP-related total costs
• Inpatient costs were significantly higher among patients receiving EC vs. EM
• The vast majority (78%) of patients were treated with EC and over half (56%) of patients receiving CAP was healthcare-associated

REFERENCES


Acknowledgments


Disclosures

US and EU employees of Nabriva, which received funding for this study from Nabriva Therapeutics, Inc., were employees of Nabriva Therapeutics. An employee of Nabriva at the time of the study, is an employee of Nabriva Therapeutics. HS is president and founder of Value Research Group, LLC. HS and his wife consulting services from Nabriva Therapeutics for this study.

Figure 2. Unadjusted Mean Costs

Figure 3. Adjusted All-Cause Mean Costs

Adjusted mean total cost was $35,391 (Figure 2)

Adjusted mean total cost was $55,391 (Figure 3)