Clinical and Economic Consequences Associated with Cytomegalovirus Infection among Allogeneic Hematopoietic Cell Transplant Patients

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OUTCOMES MEASURES

- The following outcomes during the follow-up period were measured for the CMV and non-CMV groups:
  - Total healthcare reimbursements during the 1-year post-transplant period
  - Hospitalization days per patient-year during the 1-year post-transplant period
  - Mortality rate during the 1-year post-transplant period

METHODS

Data source

Data from two health care systems were extracted from the MarketScan Research Database, which includes data from more than 10 million commercially insured and Medicare patients.

Patients

CMV treatments.

Exclusion criteria (for base case analyses)

- Patients with CMV treatments in their insurance claims records, but without evidence of
- Patients who received treatment for CMV within 30 days of infection diagnosis for other
- Patients with the following characteristics were excluded from the CMV and non-CMV groups:
  - Patients were included in the study if they had a relevant International Classification of Diseases, Ninth Revision (ICD-9) or Current Procedural Terminology procedure code for an allo-HCT and had electronic healthcare insurance claims records for commercial and Medicare patients.

CMV population

The following characteristics were extracted for the CMV and non-CMV groups:

- Age at transplant (years)
- Sex
- Race
- Type of underlying condition
- Type of the health plan
- Total number of days patients were hospitalized during the follow-up period

RESULTS

Base case analyses

Table 1. Patient characteristics for the base case population

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>CMV (n=546)</th>
<th>Non-CMV (n=2096)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>37.0 (12.0)</td>
<td>39.0 (11.0)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Sex (M/F)</td>
<td>218 (39.9)</td>
<td>787 (37.6)</td>
<td>0.1</td>
</tr>
<tr>
<td>Race (White/Non-White)</td>
<td>442 (81.1)</td>
<td>1682 (81.0)</td>
<td>0.60</td>
</tr>
<tr>
<td>Type of underlying condition</td>
<td>72 (13.2)</td>
<td>250 (11.9)</td>
<td>0.2</td>
</tr>
<tr>
<td>Type of health plan</td>
<td>32 (5.9)</td>
<td>175 (8.4)</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Sensitivity analyses

A sensitivity analysis was performed to test the impact of the exclusion criteria applied in the base case population.

- Total healthcare reimbursements: $	ext{CMV} = 512,441$, $	ext{Non-CMV} = 427,085$
- Hospitalization days per patient-year: $	ext{CMV} = 78.5$, $	ext{Non-CMV} = 78.5$
- Mortality rate: $	ext{CMV} = 0.3$, $	ext{Non-CMV} = 0.3$

LIMITATIONS

- The study was limited by potential over- and under-reporting in the insurance claims records
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CONCLUSIONS

- Total healthcare reimbursements were significantly higher in the CMV group compared to the non-CMV group.
- Hospitalization days per patient-year were comparable between the CMV and non-CMV groups.
- Mortality rate was lower in the CMV group compared to the non-CMV group.

REFERENCES