Adverse event burden of nivolumab-based immuno-oncology therapy with/without chemotherapy for first-line advanced non-small cell lung cancer

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Introduction

• Nivolumab (NIVO) is the most common type of lung cancer, accounting for 80% of cases, and with 50% of patients presenting with stages III/IV disease.
• Chemotherapy (chemo) and targeted therapy (TTx) are the standard treatment options for advanced lung cancer patients.
• NIVO plus chemo (NIVO + chemo), NIVO plus ipilimumab (IPI) (NIVO + IPI), or chemo alone can be used as the first-line treatment options.

• Adverse events (AEs) have been observed in clinical trials, and their burden is an important concern.
• One study suggested that NIVO + IPI and NIVO + chemo had similar AE rates for both histology types.

Objectives

• To quantify the AE rates and associated AE management costs for NIVO-based immuno-oncology therapy with or without chemo.

Methods

Treatment groups

The following treatment groups were analyzed in this study:

1. NIVO + IPI
2. NIVO + IPI + 2 cycles of chemo
3. NIVO + chemo
4. NIVO + IPI + chemo

Treatment groups comparison

Table 1. Treatment group comparisons

<table>
<thead>
<tr>
<th>Treatment group</th>
<th>AE rate</th>
<th>AE costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIVO + IPI</td>
<td>30%</td>
<td>$1000</td>
</tr>
<tr>
<td>NIVO + IPI + chemo</td>
<td>20%</td>
<td>$1500</td>
</tr>
<tr>
<td>NIVO + chemo</td>
<td>40%</td>
<td>$2000</td>
</tr>
</tbody>
</table>

Data sources

• All AEs were extracted using individual patient-data from CheckMate 227 (Part 1), 238 (Part 2), and 9LA (Part 1, 2, and 3).

• The unit hospitalization costs for AE management were obtained from the HCUP-NIS data.

• The AE costs were estimated based on cumulative event rates in the clinical trial population.

Results

• Higher incidence of AEs and AE costs were observed in the NIVO + IPI treatment group compared with the NIVO + chemo treatment group.

• The AE costs were higher in the NIVO + IPI treatment group compared with the NIVO + chemo treatment group.

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Discussion

Strengths and limitations

• The current study has several strengths:
  - The clinical trial arms were independent of each other (Figure 4).
  - Differences in AE costs between treatment groups attributable to different grade 3-5 AEs are shown in Figure 5.

Conclusions

• NIVO + IPI + chemo treatment is less costly than NIVO + IPI alone in the CheckMate 227 and 9LA trials.

For questions, contact: https://www.globalbmsmedinfo.com

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References


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• The clinical study teams who participated in the study are acknowledged.

Figure 1. AE rates of all-cause grade 3-5 AEs

Figure 2. AE of all-cause grade 3-5 AEs by histology

Figure 3. AE of all-cause grade 3-5 AEs by histology

Figure 4. Differences in AE costs (2021 USD) between treatment arms by grade 3-5 AEs

Figure 5. Differences in AE costs (2021 USD) between treatment arms by grade 3-5 AEs