A COST-EFFECTIVENESS ANALYSIS OF NIVOLUMAB VERSUS DOCETAXEL FOR ADVANCED NONSQUAMOUS NON-SMALL-CELL LUNG CANCER IN SECOND LINE IN A HEALTHCARE SETTING

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Background
Nivolumab (NIV) is a monoclonal antibody for patients with pre-treated advanced nonsquamous Non–Small-Cell Lung Cancer (NSCLC). It is necessary to evaluate cost-effectiveness of NIV versus docetaxel (DOC) considering the expression of programmed death ligand 1 (PD-L1).

Purpose
Cost-Effectiveness Analysis from payer’s perspective of NIV versus DOC in patient with nonsquamous NSCLC by expression of PD-L1 test (<10% vs. ≥10%)

Material and methods
Efficacy data were obtained from CheckMate-057 trial to model the incremental cost-effectiveness ratio (ICER) of NIV versus DOC:

Difference of Overall survival between NIV vs DOC

Drug costs were estimated considering manufacturer costs plus VAT (4%). NIV: mg/m^2; DOC: mg/m^2. An adult patient was considered (weight=70kg; body surface: 1.7m^2) (Total doses per administration: NIV: 210mg; DOC: 127.5mg). Total treatment costs were estimated with the median of number of administrations received (NIV: 6 administrations; DOC: 4 administrations). Time horizon considered: One year.

2 different one-way sensitivity analyses were performed the robustness of the model:

Scenario 1: Difference in OS variation
Variations of +/-20% OS were performed
PD-L1≥10% Interval considered: 0.792 LYG / 1.18 LYG
PD-L1<10% Interval considered: -0.036 LYG /-0.024LYG

Scenario 2: Cost mg variation
Variations of +/-25% were performed.
Interval considered: 17.14€/mg – 10.28€/mg

Results

<table>
<thead>
<tr>
<th>ICER (€/LYG)</th>
<th>PD-L1 expression ≥10 %</th>
<th>PDL1 expression&lt;10 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1: OS variation</td>
<td>13,557.81</td>
<td>20,336.72</td>
</tr>
<tr>
<td>-447,407.78</td>
<td>-671,111.67</td>
<td></td>
</tr>
<tr>
<td>Scenario 2: Cost mg variation</td>
<td>11,907.10</td>
<td>20,631.65</td>
</tr>
<tr>
<td>-392,934.33</td>
<td>-680,844.33</td>
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No relevant differences in ICER were observed after performed both one-way sensitivity analyses

Conclusion
✓ NIV vs. DOC is cost-effective in patients with non-squamous NSCLC with PD-L1 expression ≥10%, although ICER is high.
✓ NIV vs. DOC is not cost-effective in patients with non-squamous NSCLC with PD-L1 expression <10%.