Immune Checkpoint Inhibitor (ICI) Treatment After Progression on Anti–PD-1 Therapy in Advanced Melanoma: A Systematic Review of the Literature

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Background

ICI and targeted therapies have revolutionized the treatment of advanced melanoma. However, most patients who respond to an ICI regimen experience tumor progression during therapy or within 2 months of treatment discontinuation. Retreatment with the same ICI is common despite lack of comparative evidence on overall survival (OS) from large randomized studies. Patients who respond to prior ICI regimens have limited options.

Methods

A systematic review of PubMed and Embase was conducted to identify studies evaluating efficacy outcomes among patients with advanced melanoma who were treated with an ICI (ipilimumab, nivolumab, pembrolizumab) as mono-or combination therapy after progression on the same ICI. Studies were selected based on sample size and appropriate comparator benchmarks to assess the impact of new therapies on meaningful OS benchmarks for novel therapies in this setting.

Results

Overall survival (OS) and progression-free survival (PFS) were abstracted into an evidence table. Of the screened records, 29 met inclusion criteria for the full SLR. All criteria were met for 18 studies, with Level 1 evidence, which included prospective studies with appropriate comparator groups (n=10), and retrospective studies with appropriate comparator groups (n=8).

Conclusion

With the advent of new therapies, understanding outcomes after progression on the same ICI is critical. This systematic review provides benchmarks to assess the impact of novel therapies in this setting.

Table 2. Key Characteristics of Studies Included in the SLR

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Phase</th>
<th>Study Design</th>
<th>Number Included</th>
<th>Evidence Level</th>
<th>Comparator</th>
<th>Therapy</th>
<th>PFS</th>
<th>OS</th>
<th>Efficacy Estimates</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matsunaga et al. 2020</td>
<td>3</td>
<td>RCT</td>
<td>30</td>
<td>2</td>
<td>1:1</td>
<td>Arm1 vs. Arm2</td>
<td>13</td>
<td>28</td>
<td>20% ORR, 9.6 mo (7.8, NR)</td>
<td>15</td>
</tr>
<tr>
<td>Faries et al. 2021</td>
<td>3</td>
<td>RCT</td>
<td>112</td>
<td>2</td>
<td>1:1</td>
<td>Arm1 vs. Arm2</td>
<td>16</td>
<td>29</td>
<td>22% ORR, 16.6-mo DOR</td>
<td>16</td>
</tr>
<tr>
<td>Faries et al. 2021</td>
<td>2</td>
<td>RCT</td>
<td>112</td>
<td>2</td>
<td>1:1</td>
<td>Arm1 vs. Arm2</td>
<td>17</td>
<td>32</td>
<td>28% ORR, 16.6-mo DOR</td>
<td>16</td>
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<tr>
<td>Matsunaga et al. 2020</td>
<td>2</td>
<td>RCT</td>
<td>112</td>
<td>2</td>
<td>1:1</td>
<td>Arm1 vs. Arm2</td>
<td>18</td>
<td>35</td>
<td>28% ORR, 16.6-mo DOR</td>
<td>15</td>
</tr>
</tbody>
</table>

References