Introduction

Doublet and triplet combinations involving immunomodulatory drugs (IMiDs), proteasome inhibitors (Pis), and immunotherapy (I-O) agents have emerged to treat relapsed or refractory multiple myeloma (RRMM). RRMM is typically treated until disease progression if treatment is tolerated, therefore, duration of treatment (DoT) and time to treatment (TNT) may serve as indicators of a regimen's efficacy and safety.

Prolonged DoT with lenalidomide plus low-dose dexamethasone (Ld) has been associated with improved outcomes in clinical trials, combination therapies with the IMiD pomalidomide (pom) the Pi carfilzomib (carf) and ixazomib (ixa), and the I-O agents atezolizumab (ate) and durvalumab (dura) have demonstrated improved survival and acceptable safety.

Median DoT were 12.4 weeks for pom plus dexamethasone, 60 weeks for Ld plus (LdL) and 74 weeks for elotuzumab (ELd) with continuous treatment until progression.

Median DoT for carf plus Ld (CEL) was 80 weeks, but carf was discontinued after 18 cycles (12 weeks) and patients received only Ld from that point onwards.

However, the actual DoT and TNT of regimen with these key agents and their impact on clinical outcomes in a real-world setting are not known.

Objective

To describe the real-world DoT, TNT, and progression-free survival (PFS) of key agent-based regimens, as indicators of effectiveness and tolerability in RRMM.

Methods

This retrospective, observational study used electronic medical records from the Explorys (IBM Watson Health™) US database. Patients aged 18 years with 1 diagnosis of MM after January 1, 2010 were followed longitudinally from the index date until the end of available follow-up data (Figure 1).

Index date was defined as the date of diagnosis (International Classification of Diseases, Ninth or Tenth Revision, Clinical Modification; ICD-9-CM code 203.0x or ICD-10-CM code C90.0x) in the database. A allowable period of 1-12 months without a diagnosis of MM prior to index date was required.

Results

Baseline demographics and clinical characteristics

At data cut-off (July 5, 2017), 195 patients with RRMM received 174 Ld consisting of a key agent (elo, dura, carf, ixa, and pom)-based regimen (Table 1)

Median follow-up was longer for dura- carf- and pom-based regimen compared with elo- and ixa-based regimens.

Baseline characteristics were similar across treatment cohorts, but patients who received carf- and carf- based regimens had higher rates of hypertension and chronic obstructive pulmonary disease.

Table 1. Baseline demographics and clinical characteristics at index date

<table>
<thead>
<tr>
<th>Key Regimen</th>
<th>Baseline Adjusted Hazard Ratio</th>
<th>95% CI</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ld (n=138)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Elo (n=64)</td>
<td>1.2</td>
<td>0.8-1.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Dura (n=34)</td>
<td>1.4</td>
<td>0.9-2.3</td>
<td>0.1734</td>
</tr>
<tr>
<td>Carf (n=107)</td>
<td>1.6</td>
<td>1.1-2.3</td>
<td>0.0150</td>
</tr>
<tr>
<td>Elotuzumab (n=107)</td>
<td>1.6</td>
<td>1.1-2.3</td>
<td>0.0116</td>
</tr>
</tbody>
</table>

PFS of key agents

Elotuzumab-based regimens had the longest median PFS in patients with received either (2L) and 3L or more (2L+) treatment (Figure 2).

The key triplet regimens had significantly longer median PFS than Ld in patients with 2L+ and 2L treatment (Table 2).

DoT and TNT with key agents

Median DoT in patients with 2L and 2L+ treatment was significantly longer with elo- and ixa-based regimens than with dura- and carf- based regimens (Table 2).

Early discontinuations of key agents

Significantly more patients who received dura, carf, ixa- and pom-based regimens discontinued therapy in the first treatment cycle (28 days) than those who received elo-based regimens (Figure 2).

Table 2. K-M estimates of TNT with key regimens

<table>
<thead>
<tr>
<th>Key Regimen</th>
<th>Median TNT, months</th>
<th>95% CI</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ld (n=138)</td>
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<td>2.4-3.5</td>
<td>1.0</td>
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<tr>
<td>Elo (n=64)</td>
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<td>2.0-3.1</td>
<td>0.8</td>
</tr>
<tr>
<td>Dura (n=34)</td>
<td>2.5</td>
<td>2.0-3.1</td>
<td>0.1734</td>
</tr>
<tr>
<td>Carf (n=107)</td>
<td>2.4</td>
<td>2.0-3.0</td>
<td>0.2193</td>
</tr>
<tr>
<td>Elotuzumab (n=107)</td>
<td>2.5</td>
<td>2.0-3.0</td>
<td>0.9423</td>
</tr>
</tbody>
</table>

Figure 1. Study design

Figure 2. K-M curves for PFS with any key agent–based regimen

Figure 3. K-M curves for PFS with the key agent–based regimen

Figure 4. Bootstrap analyses of PFS, DoT, and TNT

Table 3. K-M estimates of TNT with key regimens

References

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Disclosures


Acknowledgments

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