Time-dependent Risk of Cardiovascular Events Following an Exacerbation in Patients With COPD: Post Hoc Analysis From the IMPACT Trial

Poster No. P1458

Introduction

Patients with chronic obstructive pulmonary disease (COPD) and cardiovascular disease (CVD) or risk factors for CVD have been shown to be at increased risk of subsequent cardiovascular (CV) events following an exacerbation, particularly those patients requiring hospitalization for their exacerbation and within the first 30 days after an exacerbation.

The Phase 3 IMPACT trial assessed single-inhaler triple therapy with fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI) versus FFVII or UMEC in patients with symptomatic COPD at risk of exacerbations and with varying degrees of CVD or CV risk. This post hoc analysis evaluated the time-dependent risk of CV events following an exacerbation in patients with COPD who participated in the IMPACT trial.

Methods

Phase 3

COPD: Exacerbation history in prior 12 months and ≥2 moderate or ≥1 severe exacerbation

CVAESI: cardiovascular adverse event

FFVII: fluticasone furoate

MEC:umeclidinium

Figure 1. Risk of a first CVAESI or CVAESI resulting in hospitalization or death during or following a moderate or severe exacerbation event by exacerbation history

Table 1. Baseline characteristics

<table>
<thead>
<tr>
<th>Event</th>
<th>CVAESI</th>
<th>CVAESI resulting in hospitalization or death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total n</td>
<td>Patients experiencing CV event, n (%)</td>
<td>Patients experiencing CV event, n (%)</td>
</tr>
<tr>
<td>Moderate exacerbations</td>
<td>4207</td>
<td>80 (1.9)</td>
</tr>
<tr>
<td>1–30 days post event</td>
<td>3874</td>
<td>74 (1.9)</td>
</tr>
<tr>
<td>31–60 days post event</td>
<td>2410</td>
<td>49 (1.4)</td>
</tr>
<tr>
<td>91–365 days post event</td>
<td>2534</td>
<td>61 (2.4)</td>
</tr>
<tr>
<td>Severe exacerbations</td>
<td>1069</td>
<td>124 (11.3)</td>
</tr>
<tr>
<td>1–30 days post event</td>
<td>790</td>
<td>12 (1.5)</td>
</tr>
<tr>
<td>31–60 days post event</td>
<td>903</td>
<td>13 (2.2)</td>
</tr>
<tr>
<td>91–365 days post event</td>
<td>385</td>
<td>10 (2.6)</td>
</tr>
</tbody>
</table>

Results

A total of 10,355 patients were included in the intent-to-treat population (Table 1).

Overall, the number of patients experiencing a CV event during or following an exacerbation was low (Table 2).

This post hoc analysis evaluated the time-dependent risk of CV events following an exacerbation in patients with COPD who participated in the IMPACT trial.

A significantly increased risk of a CVAESI or CVAESI resulting in hospitalization or death was seen during a moderate or severe exacerbation event, which decreased over time thereafter (Figure 1).

The increase in the risk of a CVAESI or CVAESI resulting in hospitalization or death was higher during a severe exacerbation (hazard ratio: 21.84 and 41.29, respectively) than during a moderate exacerbation (hazard ratio: 2.63 and 4.66, respectively).

A similar trend was seen in the subgroup analyses, with similar increases in risk of CVAESI regardless of patients exacerbation history (Figure 2) and CV risk factors at screening (Figure 3).

Conclusions

In IMPACT, while the overall number of patients experiencing CV events during or following an exacerbation was low, a significantly increased risk of CVAESI or CVAESI resulting in hospitalization or death was seen during a moderate or severe exacerbation, with the risk decreasing over time thereafter.

This increased risk was higher during a severe exacerbation compared with a moderate exacerbation regardless of CVAESI severity.

A similar increase in risk was observed regardless of the presence of CV risk factors at screening or the patients’ exacerbation history, with the risk increase following a similar pattern as in the overall analysis.

This analysis confirms the increased risk of CVAESI during and in the first 30 days following an exacerbation seen in other studies, highlighting a need for exacerbation prevention and close patient monitoring following exacerbation events, irrespective of a patient’s exacerbation history or CV risk factors.

References


Prepared for the American College of Chest Physicians Congress (2020)