EFFECTS OF STATINS USE ON CLINICAL OUTCOMES IN PATIENTS ADMITTED WITH COMMUNITY-ACQUIRED PNEUMONIA

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OBJECTIVE

➢ The objective of this study is to evaluate the effect of statins on patients admitted with CAP by assessing CRP levels and length of hospital stay (LOS).

BACKGROUND

➢ Statins have shown some beneficial impact on patients with community-acquired pneumonia (CAP).

➢ This was mainly attributed to their pleiotropic effects, which include anti-inflammatory, anti-oxidative, and immuno-modulatory regulation.

METHODS

➢ A retrospective cross-sectional observational study was carried out over 12 months (June 2016 through June 2017) at a tertiary care university affiliated hospital in Beirut.

➢ Inclusion criteria included being an adult inpatient admitted for CAP and having at least two CRP levels ordered at various days during hospitalization.

➢ The response to antibiotic therapy was evaluated by observing a decrease in CRP levels and LOS between the two studied groups.

➢ The study was performed in accordance with the Declaration of Helsinki and its later amendments and was approved by the institutional review board.

RESULTS

➢ 151 patients were included in this study: 90 were statin-users and 61 were non-users.

➢ Base on a Chi-Square test, statin-users had significantly more comorbid conditions such as diabetes, hypertension and renal insufficiency, and both groups had similar percentages of congestive heart failure, COPD, asthma and GERD.

➢ The severity of pneumonia based on the CURB-65 criteria was comparable between the two groups (using Pearson Chi-Square test).

➢ Based on an independent sample test, no statistical significance was shown when comparing CRP level (in mg/L) of statin users to nonusers.

<table>
<thead>
<tr>
<th>CRP level: Day 1</th>
<th>Statin</th>
<th>No statin</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.48</td>
<td>16.45</td>
<td>0.65</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CRP level: Day 3</th>
<th>Statin</th>
<th>No statin</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.34</td>
<td>6.51</td>
<td>0.85</td>
<td></td>
</tr>
</tbody>
</table>

➢ The length of hospital stay (in days) was not positively impacted by the use of a statin.

<table>
<thead>
<tr>
<th>LOS</th>
<th>Statin</th>
<th>No statin</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.4</td>
<td>8.8</td>
<td>0.29</td>
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➢ Days to normalization for fever comparing both groups was calculated using cox regression.

➢ There was no statistically significant difference between statin users and non-users for the time to defervesce (p =0.85).

DISCUSSION

➢ In this retrospective study, statin use in community-acquired pneumonia did not show a positive impact on inflammatory response measured by using CRP, days to normalization of fever, and length of hospital stay.

➢ Findings from different studies were controversial: the measured clinical outcomes were 30-day mortality, length of hospital stay, inflammatory mediators, and intensive care unit admission due to pneumonia or a combination of outcomes.

➢ In most studies, the choice of the statin drug and the dose were not standardized.

CONCLUSION

➢ In this retrospective cross-sectional study, CAP patients using statin therapy did not show any improvement in their clinical outcomes measured by CRP levels and LOS, compared to patients not on statin therapy.

➢ Further randomized controlled trials are needed to clarify the role of statins in community-acquired pneumonia.

DISCLOSURE

All authors: Nothing to disclose