ABSTRACT

OBJECTIVES

• Rasburicase is a recombinant urate oxidase enzyme that reduces high levels of plasma uric acid (UA) resulting from tumor lysis syndrome (TLS). Rasburicase reduces UA levels within 4 hours of administration, thus minimizing risk of serious complications from TLS. Treatment failure analysis studies have evaluated the clinical and economic consequences of failure of rasburicase (RAS) combined with allopurinol (ALLO) in adults receiving rasburicase with or without allopurinol.

METHODS

• Patients were in the Premier hospital database administration (1999-2006), and represent the US projected patient counts. Patients were excluded if they were aged <18 years or were admitted for a reason unrelated to tumor lysis syndrome (RAS plus allopurinol) in the first 2 days of hospitalization. The retrospective design of this analysis did not allow for randomization of new UA patients, but rather allows for the use of propensity score analysis. This method compares rasburicase to allopurinol in tumor lysis syndrome.

RESULTS

• There were 280 rasburicase and 310 combination patients matched in the analysis. The mean age was 66.2 years, with 31% being female. Rasburicase patients had a mean hospitalization cost of $30,000, compared to $16,157 for combination treatment. Duration of critical care was statistically similar between the two groups, while the number of days in critical care (CC) was similar in both cohorts (rasburicase = 2.9 days vs combination = 3.1 days; p=0.792).

CONCLUSION

• Combination therapy of rasburicase and allopurinol resulted in higher total hospitalization costs and a longer LOS compared to rasburicase monotherapy.

INTRODUCTION

TUMOR LYSION SYNDROME (TLS) OVERVIEW

• TLS is a serious complication that can occur spontaneously as a result of chemotherapy-induced cytolysis in both myeloid- and lymphoproliferative malignancies, as well as solid tumors. TLS is manifested as a constellation of metabolic disturbances (hyperuricemia, hypercalciuria, hyperphosphatemia, hypoalbuminemia, and hypocalcemia). TLS can lead to serious clinical complications, including acute renal failure requiring dialysis, hypocalcemia, hypophosphatemia, and hyperkalemia. Rasburicase reduces UA levels within 4 hours of administration. Therefore, the emergence of TLS can have a negative impact on the outcomes of patients.

METHODS

• Comparisons of Standard Treatments for TLS

CONSIDERATIONS

• Patients with hematologic malignancies who also suffer from renal failure appear to incur a greater impact on both LOS and costs than those without renal failure.

COMPARISON OF STANDARD TREATMENTS FOR TLS

<table>
<thead>
<tr>
<th>Comparator</th>
<th>Mean Hospitalization Costs</th>
<th>LOS Days</th>
<th>Combination</th>
<th>Rasburicase</th>
<th>Difference</th>
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<tbody>
<tr>
<td>Combination</td>
<td>$8,985</td>
<td>16</td>
<td>$8,255</td>
<td>$8,985</td>
<td>$730</td>
</tr>
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<td>Rasburicase</td>
<td>$13,436</td>
<td>14</td>
<td>$13,157</td>
<td>$13,436</td>
<td>$279</td>
</tr>
</tbody>
</table>

REFERENCES

• Rasburicase is a recombinant urate oxidase enzyme that reduces high levels of plasma uric acid (UA) resulting from tumor lysis syndrome (TLS). Rasburicase reduces UA levels within 4 hours of administration, thus minimizing risk of serious complications from TLS. Treatment failure analysis studies have evaluated the clinical and economic consequences of failure of rasburicase (RAS) combined with allopurinol (ALLO) in adults receiving rasburicase with or without allopurinol. The retrospective design of this analysis did not allow for randomization of new UA patients, but rather allows for the use of propensity score analysis.

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DISCUSSION

• This study supported by sanofi-aventis U.S.