Induction Chemotherapy Versus Chemotherapy Alone for Superior Sulcus Lung Cancer

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Background

• Superior sulcus (Pancoast) tumors are uncommon and challenging to treat. Although treatment with induction chemoradiotherapy (CR) followed by surgery employed in the Intergroup INT 0160 trial demonstrated improved 5-year survivals, there are significant perioperative morbidity and mortality associated with this approach. We reviewed our experience of using several induction regimens in these patients.

Methods

• All patients who underwent multimodality treatment including en bloc resection of lung cancer invading the superior pulmonary sulcus and spine between 1994 and 2016 were retrospectively reviewed. The Multivariable Cox Proportional Hazards model was constructed.

Results

• Of 102 analyzed patients, 53 (52%) underwent induction CR, 34 (33%) underwent induction chemotherapy only (Ch) followed by adjuvant radiotherapy, and 15 (15%) underwent no induction therapy followed in most with adjuvant radiotherapy.

• 66% (67) of patients were treated in the last 10 years.

• All patients starting induction therapy underwent surgery.

• There were no mortalities due to induction therapy and only 2 postoperative deaths (1.9%).

• To date, 42 patients are alive with a median follow-up of 72.5 months (see table).

• Survival was significantly influenced by age, FEV1, positive resection margins, surgical complications, but not the induction regimen.

• In a subset of 65 patients with R0 resections (excluding N2 or N3 disease, no induction therapy or primary lung sarcomas), induction chemotheraphy only is a significant predictor of survival (HR 0.34, 95% CI: 0.12-0.97, p=0.04).

• Treatment toxicity and postoperative complications were somewhat higher with induction CR, but not statistically significant.

<table>
<thead>
<tr>
<th>Induction Regimen (All Stages)</th>
<th>Median Survival (95% CI)</th>
<th>5-yr. Survival Rates %</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, n=102</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Chemo Only, n=34</td>
<td>45 (18.4-71.6)</td>
<td>45</td>
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<tr>
<td>ChemoRads n=53</td>
<td>38 (not estimable)</td>
<td>47</td>
<td>NS</td>
</tr>
<tr>
<td>No Induction, n=15</td>
<td>54 (20.6-87.4)</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>45 (0-100.0)</td>
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<td>35</td>
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</tbody>
</table>

Conclusion

• Our single-institutional experience compares favorably to the results from INT-0160. Induction Ch only followed by adjuvant radiotherapy provides comparable outcomes to induction CR and should be considered an acceptable alternative to induction CR but with less toxicity.

References