A443 - Effect of intensivist on the outcomes of advanced lung cancer who admitted to intensive care unit

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Introduction:
Lung cancer is the leading cause of intensive care unit (ICU) admission in patients with the advanced solid tumors. This study was aimed to elucidate the clinical factors associated with ICU mortality of advanced lung cancer patients and the effect of intensivist’s contribution on their clinical outcomes.

Methods:
We included patients with advanced lung cancer including non-small cell lung cancer (NSCLC) with stage IIIB or IV and small cell lung cancer (SCLC) with extensive stage who admitted to ICU from 2005 to 2016. Multivariate logistic regression analysis was performed to find the variables associated with ICU mortality and in-hospital mortality. We applied autoregressive integrated moving average (ARIMA) for time-series analysis of the intervention of intensivists.

Results:
Among total 264 patients with advanced lung cancer, 85 patients (32.2%) were admitted ICU before introduction of organized intensive care at 2011, and 179 (67.8%) were admitted after 2011. The leading cause of admission was the respiratory failure (77.7%) and cancer-related event (34.5%) in terms of intensivist’s and oncologist’s perspective. Before and after 2011, the 30-day ICU mortality rate was 43.5% and 40.2% (p = 0.610), and the hospital mortality rate changed from 82.4% to 65.9% (p = 0.006). The length of stay (LOS) ICU and hospital were also statistically significantly decreased after 2011 (14.5 ± 16.5 vs. 8.3 ± 8.6, p < 0.001; 36.6 ± 37.2 vs. 22.0 ± 19.6, p < 0.001). In multivariate analysis, admission after 2011 was independently associated with decreased hospital mortality (Odds ratio 0.42 95% confidence interval (CI) 0.21-0.77, p = 0.006). In autoregressive integrated moving average (ARIMA) models, the intervention of intensivist was statistically associated with reduced hospital mortality. (Coefficient -16.06, 95% CI -26.33 - -5.78, p = 0.002)

Conclusion:
In patients with advanced lung cancer who admitted to ICU, the intervention of intensivist could be contributable to improve their clinical outcomes.

Table 1:

<table>
<thead>
<tr>
<th></th>
<th>All patients (N = 264)</th>
<th>Pre-2011 (N = 85)</th>
<th>Post-2011 (N = 179)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-day ICU mortality</td>
<td>109 (41.3%)</td>
<td>37 (43.5%)</td>
<td>72 (40.2%)</td>
<td>0.610</td>
</tr>
<tr>
<td>Hospital mortality</td>
<td>188 (71.2%)</td>
<td>70 (82.4%)</td>
<td>118 (65.9%)</td>
<td>0.006</td>
</tr>
<tr>
<td>Length of stay in ICU, days</td>
<td>10.3 ± 12.0</td>
<td>14.5 ± 16.5</td>
<td>8.3 ± 8.6</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Length of stay in hospital, days</td>
<td>26.7 ± 27.3</td>
<td>36.6 ± 37.2</td>
<td>22.0 ± 19.6</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Clinical outcomes according to intensivist’s intervention

Image 1:
Trends of advanced lung cancer patients admitted to intensive care unit

Image 2:

Run chart of hospital mortality of advanced lung cancer patients admitted to intensive care unit