The PulmonArY NOdule Plasma proTeomic Classifier (PANOPTIC) study was designed to clinically validate an integrated classifier. This biomarker combined clinical risk factors with protein expression in patients with newly diagnosed incidental lung nodules to stratify the risk of malignancy. Given the potentially different biology involved in differing cancer subtypes, the performance of the classifier was analyzed across subtypes found in the study.

**Methods (continued)**

The lower-risk population (n=178) and the cancer subtypes were evaluated for test performance. Pairwise evaluation was conducted using the Marascuillo procedure.

**Results for PANOPTIC**

- Total patients eligible for analyses were 392, of which 178 were in the integrated classifier intended use cohort (pCa≤50%)
- The cancer prevalence for the intended use group was 16%, mean nodule size was 16.8±0.6 mm, and age 66±1.6
- Test accuracy: sensitivity 97%, specificity 44%, PPV 25%, NPV 98%
- Clinical utility calculations were: 40% reduction in invasive procedures, 3% of malignant nodules to surveillance (compared to 45% actual)
- The accuracy of the physician estimated pCa for the total population was an AUC of 0.85 while that for the intended use group was 0.69 (Figure 1)
- The integrated classifier performed significantly better in the intended use group than physician pCa, Mayo model, VA model, and PET imaging with AUC of 0.76, 0.69, 0.69, 0.60, and 0.58 respectively

**Summary of Results**

The analysis did not show any difference in classifier performance for the cancer subtypes found in the study.

**Conclusion**

- Of the 178 lower-risk patients, 29 had a malignant nodule and 149 a benign nodule.
- Cancer subtypes were represented by 17 (59%) adenocarcinoma, 4 (14%) squamous cell, 1 (3%) non-specific NSCLC, 2 (7%) small cell, 3 (10%) carcinoid and 2 (7%) non-specific other cancers.
- As shown in Table 1, the integrated classifier performed similarly in all subtypes.
- The results were analyzed in a pairwise fashion using the Marascuillo procedure with none of the comparisons reaching statistical significance (data not shown).

**Table 1, Cancer Subtype Results (n=178)**

<table>
<thead>
<tr>
<th>Group</th>
<th>Cancer</th>
<th>Benign</th>
<th>Total</th>
<th>SEN</th>
<th>SPEC</th>
<th>NPV</th>
</tr>
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<tbody>
<tr>
<td>Panoptic LR</td>
<td>29</td>
<td>149</td>
<td>178</td>
<td>97%</td>
<td>44%</td>
<td>98%</td>
</tr>
<tr>
<td>NSCLC</td>
<td>22</td>
<td>149</td>
<td>171</td>
<td>100%</td>
<td>44%</td>
<td>100%</td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>17</td>
<td>149</td>
<td>166</td>
<td>100%</td>
<td>44%</td>
<td>100%</td>
</tr>
<tr>
<td>Squamous Cell</td>
<td>4</td>
<td>149</td>
<td>153</td>
<td>100%</td>
<td>44%</td>
<td>100%</td>
</tr>
<tr>
<td>Non-Specified</td>
<td>1</td>
<td>149</td>
<td>150</td>
<td>100%</td>
<td>44%</td>
<td>100%</td>
</tr>
<tr>
<td>SCLC</td>
<td>2</td>
<td>149</td>
<td>151</td>
<td>100%</td>
<td>44%</td>
<td>100%</td>
</tr>
<tr>
<td>Carcinoid</td>
<td>3</td>
<td>149</td>
<td>152</td>
<td>100%</td>
<td>44%</td>
<td>100%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>149</td>
<td>151</td>
<td>50%</td>
<td>44%</td>
<td>98%</td>
</tr>
</tbody>
</table>

**References**


**Table 1, Cancer Subtype Results (n=178)**

- The analysis did not show any difference in classifier performance for the cancer subtypes found in the study.
- However, the small numbers observed in many of the subtypes preclude conclusive.