#133 Peripheral Blood-Based Biomarkers of Prognosis and Treatment Response in Patients with Non-Small Cell Lung Cancer Treated with PD-1 Inhibitors

Ioannis Tourkantonis¹, Dimitra Grapsa¹, Andriani Charpidou¹, Ioannis Gkiozos¹, Helen Gogas², Diamanto Psyri³, Konstantinos Syrigos¹

¹Oncology Unit, 3rd Department of Internal Medicine, Medical School, National & Kapodistrian University of Athens, Athens/Greece; ²Oncology Unit, 1st Department of Internal Medicine, Medical School, National & Kapodistrian University of Athens, Athens/Greece; ³Oncology Unit, 2nd Department of Internal Medicine, Medical School, National & Kapodistrian University of Athens, Athens/Greece

PRESENTING AUTHOR: Ioannis Tourkantonis, MD, PhD, email: tourkantonis@hotmail.com

Conflicts of interest: NONE declared

BACKGROUND

- To date, there remains an urgent need for more accurate biomarkers to predict clinical outcomes in patients with advanced-stage non-small cell lung cancer (NSCLC) treated with PD-1 inhibitors.

- The primary aim of our study was to evaluate the prognostic and predictive value of peripheral blood-based biomarkers, both at baseline (pre-treatment) and post-treatment, in this challenging clinical setting.

METHODS

- A retrospective study of the clinicopathological features and treatment data of 117 patients with advanced-stage NSCLC, treated with nivolumab or pembrolizumab at the Oncology Unit of Sotiria Athens General Hospital, was performed.

- Baseline and post-treatment absolute counts of neutrophils (ANC), lymphocytes (ALC), monocytes (AMC), eosinophils (AEC) and platelets (PLT), LDH as well as the ratio of neutrophils to lymphocytes (NLR), platelets to lymphocytes (PLR) and myeloid to lymphoid cells (M:L) were correlated with treatment response, durable clinical benefit (defined as absence of disease progression at 6 months) and progression-free survival (PFS).

RESULTS

- 58.1% of patients had no immune-related adverse events (irAEs), while rash and hyperthyroidism were observed in 17.9% and 12.8% of patients, respectively.

- Durable clinical benefit (DCB) rates were significantly lower in patients with increased pretreatment ANC, AMC, PLT, NLR, PLR, M:L and PLT≥400 K/μl as well as post-treatment ANC≥7500/μl, AMC≥650/μl, NLR≥5 and PLR>160.

- Increased pretreatment PLR and PLT≥400K/μl as well as increased post-treatment ANC, AMC, PLT, NLR, PLR, M:L, LDH, ANC>7500/μl, AMC>650/μl, PLT>400K/μl, NLR > 5 and PLR>160 were all correlated with reduced PFS.

- In multivariate analysis, increased pretreatment PLR [HR (95% CI): 0.79 (0.63 – 0.99); p=0.040] was independently correlated with worse PFS.

<table>
<thead>
<tr>
<th>Immunotherapy line</th>
<th>HR (95% CI)+</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (ref)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3.16 (1.34 – 7.42)</td>
<td>0.008</td>
</tr>
</tbody>
</table>

| Number of infusions | 0.47 (0.39 – 0.57) | <0.001 |
| PLR (pretreatment)  | 0.79 (0.63 – 0.99) | 0.040  |

Pre-treatment PLR may independently predict prognosis in advanced NSCLC patients treated with PD-1 inhibitors.