



P3.175 Peripheral Blood Immunophenotyping Reveals Patterns of Short and Durable Immunotherapy Response in NSCLC

Natalia Krzyżanowska¹, **Robert Chudzik**², Kamila Wojas-Krawczyk¹, Tomasz Kucharczyk¹, Izabela Chmielewska¹, Magdalena Wójcik-Superczyńska¹, Tomasz Jankowski¹, Paweł Krawczyk¹, Janusz Milanowski¹

¹Chair and Department of Pneumology, Oncology and Allergology, Medical University of Lublin, Poland · ²Chair and Department of Thoracic Surgery, Medical University of Lublin, Poland

Presenting author: Robert Chudzik · robert.chudzik@umlub.edu.pl



IASLC 2026 World
Conference on Lung Cancer

SEPTEMBER 12 – 15, 2026
SEOUL, REPUBLIC OF KOREA

INTRODUCTION

Immune checkpoint inhibitors targeting PD-1 and PD-L1 are now a central component of treatment for non-small cell lung cancer (NSCLC).

PD-L1 expression on tumour cells remains the only predictive biomarker in routine use. Its performance is imperfect, and because it is assessed once, on archival tissue, it cannot reflect the changes in immune status that occur during therapy.

Peripheral blood offers a minimally invasive alternative. It can be sampled repeatedly, it reports systemic immune status, and the simplest indices derived from it — the monocyte-to-lymphocyte and neutrophil-to-lymphocyte ratios — are already generated by every routine blood count at no additional cost.

Aim

To characterise peripheral blood factors associated with short and durable response to pembrolizumab-based treatment in patients with NSCLC.

METHODS

Patients

81 patients with NSCLC qualified for treatment with pembrolizumab alone or pembrolizumab combined with chemotherapy.

Sampling

Peripheral blood collected before initiation of treatment and at three-month intervals during therapy.

Immunophenotyping

Peripheral blood mononuclear cells were isolated and analysed by flow cytometry-based immunophenotyping.

Inflammatory indices

Monocyte-to-lymphocyte ratio (MLR) and neutrophil-to-lymphocyte ratio (NLR) were calculated from routine laboratory parameters.

Stratification and analysis

Patients were stratified by progression-free survival into a **short-response group (PFS < 6 months, n = 41)** and a **durable-response group (PFS ≥ 6 months, n = 40)**. For each parameter, patients were dichotomised at its median and progression-free survival compared by the Kaplan–Meier method, with hazard ratios and 95% confidence intervals. Statistica v.13.3 and MedCalc 18.11.6.

Limitations

Single-centre cohort. The six-month PFS threshold is pragmatic rather than validated, and dichotomising each parameter at its own median is data-driven, which tends to overstate effect size. The analyses are exploratory and were not corrected for multiple comparisons. Numbers at risk show that the flow cytometry and first-follow-up endpoints were available in a subset of about 65 patients rather than all 81. Blood indices are sensitive to intercurrent infection, corticosteroid exposure and comorbidity, which were not adjusted for, and with no non-immunotherapy comparator a prognostic effect cannot be separated from a predictive one.

DISCUSSION AND CONCLUSION

An immunosuppressive systemic environment

High proportions of monocytes and neutrophils appear to indicate an immunosuppressive environment in patients with NSCLC. Both were raised in the short-response group before treatment and during follow-up, and both feed directly into the MLR and the NLR — which is why two ratios taken from a routine blood count carry as much signal as they do.

The NKT result is counterintuitive

The most surprising finding is the high proportion of NKT cells in patients with short response. The role of NKT cells in the antitumour response is dualistic, and this pattern may be linked to a predominance of innate over adaptive immunity, including disturbance of antigen presentation and recognition.

Two analyses, not one

The two approaches answer different questions. The inflammatory indices are free, repeatable at every visit and immediately available; the immunophenotyping explains what those indices are actually measuring. In clinical practice both are worth considering.

Conclusion

Simple inflammatory indices derived from routine blood counts may serve as accessible predictive markers of response to pembrolizumab-based immunotherapy in NSCLC. Peripheral blood immunophenotyping provides additional insight into the immune mechanisms associated with short and durable response and may support stratification of patients to more frequent monitoring of treatment efficacy. Prospective validation is required before either is used to guide treatment decisions.

REFERENCES & ACKNOWLEDGEMENTS

- Reck M, Rodríguez-Abreu D, Robinson AG, et al. N Engl J Med. 2016;375:1823–33.
- Gandhi L, Rodríguez-Abreu D, Gadgeel S, et al. N Engl J Med. 2018;378:2078–92.
- Herbst RS, Baas P, Kim DW, et al. Lancet. 2016;387:1540–50.
- Mezquita L, Auclin E, Ferrara R, et al. JAMA Oncol. 2018;4:351–7.
- Diem S, Schmid S, Krapf M, et al. Lung Cancer. 2017;111:176–81.
- Krieg C, Nowicka M, Guglietta S, et al. Nat Med. 2018;24:144–53.

Funding. Innovation Grant (GI/3), Medical University of Lublin.

Acknowledgements. The authors thank the Chair and Department of Pneumology, Oncology and Allergology and the Chair and Department of Thoracic Surgery, Medical University of Lublin.

Artificial Intelligence (AI) Use Disclosure

Disclosure for this poster: Claude (Anthropic) was used as a supportive tool to draft and edit the poster text in English and to lay out the poster. The figures are the authors' own analyses, reproduced from the source presentation with their annotations translated into English. No content was generated from AI knowledge: all data, analyses, interpretation and conclusions are the authors' own. The authors reviewed and verified every element and take full responsibility for the content.

In accordance with the standards and guidance set forth by the Accreditation Council for Continuing Medical Education (ACCME), individuals in control of content are required to disclose the use of artificial intelligence (AI) in the development of educational materials. This includes identification of the specific AI tool(s) utilized and a description of how AI contributed to content creation.

IASLC maintains oversight of all educational content and conducts a thorough review process to ensure that materials are evidence-based, fair-balanced, and free from commercial bias, consistent with ACCME Standards for Integrity and Independence.

While AI may be used as a supportive tool in content development, it does not replace clinical expertise or independent medical judgment. Learners are advised to critically evaluate all information presented and apply their own professional judgment when incorporating knowledge into clinical practice.

RESULTS

