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Tumor PD-L1 expression and blood biomarkers of activity of adaptive immunity and tumor microenvironment in patients with solid tumors

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INTRODUCTION

Tumor microenvironment (TME)

ΙΙ-1β

High level of IL-1β was reported to be associated with immunosuppression of lymphocytes Tumor

Tumor Cell

-L1

Mac

Tumor PD-L1 overexpression leads to suppression of cytotoxic adaptive immunity

The ratio of neutrophils and lymphocytes (NLR)

NLR in the tumor tissue and in the peripheral blood reflects the <u>activity of adaptive</u> <u>immunity</u>

The aim of the work is to study the relationship between the tumor expression of the PD-L1, the concentration of serum IL-1 β , a possible marker of TME activity, and NLR, a marker of adaptive immunity activity.

MATERIALS AND METHODS

48 patients with various progressed solid tumors

The serum level of IL-1β - ELISA

A full blood count - cytometry

The start of checkpoint inhibitors therapy

Tumor PD-L1 expression - immunohistochemistry

Statistical analysis was performed using GraphPad Prism 6 (Graph Pad Software, USA) using the methods of Fisher, Mann-Whitney, and Spearman's statistical analysis.

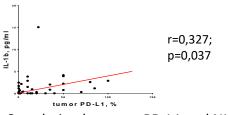
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RESULTS

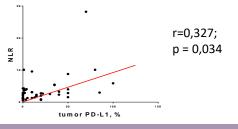
Positive PD-L1 expression was observed in 72,92% (35/48) of the patients, while IL-1 β was detected in 66,67% (32/48) and high NLR was registered in 35,42% (17/48).

In a group with positive PD-L1 expression the mean concentration of IL-1 β was 1,65 \pm 0,54 pg/ml, the mean NLR was 4,26 \pm 0,94 109/L, what exceeds the meanings of the group with negative expression, but without statistical significance

Correlation between PD-L1 and IL-1β



Correlation between PD-L1 and NLR



CONCLUSIONS

- \triangleright The study revealed a positive correlation between the tumor PD-L1 expression, the serum IL-1 β concentration and the NLR.
- ➤ The obtained result may indicate the influence of the immunosuppressive properties of the tumor on the state of the patient's immunity.
- ightharpoonup A comprehensive determination of tumor PD-L1 expression, serum IL-1 β concentration and NLR can be used as an assessment of the patient's immune status before starting treatment with checkpoint inhibitors.

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