

Review of: "Patterns of Peripheral Blood B-Cell Subtypes Are Associated With Treatment Response in Patients Treated With Immune Checkpoint Inhibitors: A Prospective Longitudinal Pan-Cancer Study"

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Liquid and easily available biomarkers for therapy prediction of solid cancer disease have urgently to be identified. While tumor mutational burden (TMB) and expression of the suppressive immune checkpoint molecule PD-L1 are often suggested for tumor patient selection before treatment, contrasting results are still seen in clinical trials. Further, liquid immune markers such as neutrophils counts in the peripheral blood bear predictive value. However, the dynamics of the changes of such immune markers is often underestimated and it is becoming more and more obvious that this has to be taken into strong account.

In the work about patterns of peripheral blood B cell subtypes as predictive markers for tumor treatment response to immune checkpoint inhibitors the dynamics of the response is confirmed and analyses were performed before treatment and at the first response evaluation 2-3 months after start of the treatment. Here, focus was set on B cells which have been, in contrast to autoimmune disease research, often underestimated in tumor immunology. The authors revealed that particularly unswitched and switched memory B cells significantly decrease after the treatment. However, correlations to disease control rate are only observed with percentage of CD21 negative B cells, naïve B cells and switched memory B cells. While these explorative and in big parts preliminary findings are of high scientific and potential clinical interest, it has to be stressed that the analyses, even though being performed prospectively, are based on a very low patient number and a heterogeneous patient collective. In addition, clinical co-funding factors were not considered at all. Furthermore, primary endpoints such as overall survival and progression-free survival should be more powerful ones.

One can conclude that dynamic changes of immune markers in the peripheral blood bear a huge potential as predictive markers, but much more in-depth analyses with defined patient collectives considering clinical co-funding factors are needed in the future to draw final conclusions which immune cells or most likely immune matrices are valuable for patient stratification for immune therapies of cancer and for prediction of response. Nevertheless, explorative analyses as provided by this work are very important and serve as basis for defining the key immune cells and their dynamics during therapy with immune checkpoint inhibitors of cancer diseases.