the commercial monoclonal antibody. Collectively, we demonstrate that the rationally designed small molecules can be potent and specific drugs for anti-cancer therapy.

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P81

Recovery of distinct T cell subsets under severe lymphopenic conditions in hemoblastosis patients


Numerous studies have shown that high-dose chemotherapy and autologous hematopoietic stem cell transplantation (AH SCT) led to a profound and long-lasting state of immunodeficiency characterized by persisting low levels of T cells in hemoblastosis patients. Well-timed T-cell reconstitution is crucial for early restoration of anti-infectious and anti-tumor immune response. Lymphocyte recovery is mediated through the two main mechanisms – a homeostatic proliferation of T cells and generation of new naive T cells via thymopoiesis. It is known, that homeostatic proliferation is important for the restoration of T cell count in immune competent host during the 1st year following AHSCT. Thymus begins to fill up T cell repertoire approximately from the 6th month following AHSCT.

We have investigated dynamics of CD4+FOXP3+ Treg recovery following AHSCT and possible relationship between Tregs and clinical outcomes since the suppressive activity of Tregs under lymphopenic conditions may influence on peripheral expansion of T cells. Thymic activity following AHSCT has been evaluated by measuring amounts of CD4+CD45RA+CD31+ naive T cells, i.e. “recent thymic emigrants” (RTEs).109 patients with non-Hodgkin’s lymphomas, Hodgkin’s lymphoma and multiple myeloma underwent AHSCT in 2009–2014. The content of circulating CD4+FOXP3+ Tregs and CD4+CD45RA+CD31+ T cells was evaluated using flow cytometry before AHSCT, at the day of engraftment, and following 6 and 12 months.

Pre-transplant count of CD4+FOXP3+ Tregs was significantly higher compared to healthy controls (5.4 ± 2.9 vs 3.8 ± 1.9%; pU = 0.011; here and below data presented as Mean ± SD). Percentage of Tregs restored rapidly and reached initially high level at the time of engraftment, and then subsequently decreased within a year until it lowered to healthy donors’ values. CD4+FOXP3+ Tregs at the time of engraftment were increased in patients with relapse or progression of disease within 6 and 12 months following AHSCT compared to non-relapsed patients (11.0 ± 6.1 vs 6.2 ± 3.0%; pU = 0.016, and 10.1 ± 5.2 vs 6.1 ± 3.8%; pU = 0.008). Pre-transplant count of CD4+CD45RA+CD31+ T cells was significantly lower compared to healthy controls (17.1 ± 11.4 vs 30.3 ± 11.2%, pU = 0.0005) and did not reach donors’ values following 12 month (23.1 ± 13.5%, pU = 0.032). Relapsed patients had the same quantity of RTEs as the patients with remission within the 1st year following AHSCT. There was no any significant association between RTEs and Tregs counts.

Surprisingly, we have found high levels of circulating CD4+CD45RA- T cells co-expressing CD31 molecule in patients before AHSCT, since this molecule is infrequent on memory subsets in healthy controls (20.7 ± 12.0 vs 8.2 ± 2.1%, pU < 0.0001). Relative amount of CD4+CD45RA-CD31+ T cells highly correlated with CD4+CD45RO+CD31+ population (rS=0.72; p < 0.0001). The count of CD4+CD45RA-CD31+ T cells recovered intensively and reached the pre-transplant level within the 1st month following AHSCT, and remained at the same level throughout the follow-up. There were no any differences in relative count of CD4+CD45RA-CD31+ T cells between patients with early relapse and remission during the 1st post-transplant year.

Our data of Tregs reconstitution may confirm the earlier assumption that the presence of Tregs during the period of immune recovery preserves optimal T cell receptors diversity. However, the excess of these cells leads to the inhibition of proliferative activity and immune response and is associated with early relapse. Conversely, relatively slow recovery of RTEs determines their lack of influence on survival within the 1st post-transplant year.

The biological role and the way of appearance of CD31 molecule on T cell memory subset (CD4+CD45RA- and/or CD4+CD45RO+) still remain unclear. Further studies are required to enlighten the role of CD31+ memory T cells on lymphoproliferative disorders pathogenesis.

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P57

The first Siberian experience of gastric cancer riskometry: Prospective “case-control” study


Background: Gastric cancer (GC) remains one of the most important gastrointestinal cancers worldwide. The incidence and mortality rate from GC in Russia is higher in comparison with other European countries and USA. It should be noted that riskometry for the GC doesn’t exist. Parallel assessment of pepsinogen I (PG I), pepsinogen II (PG II), PG I/PG II ratio and gastrin-17 (G-17), as well as antibodies to Helicobacter pylori is an exact and validated set of stomach-specific biomarkers that reflect the extent and grade of gastric atrophy as a main pre-malignant condition for GC.

Aim: To study the diagnostic and predicting value of biomarkers of atrophic gastritis (AG) in retro-prospective cohort case-control study in Siberian population.

Object and methods: General population sample was surveyed in Novosibirsk in 2003–2005 (10,000 subjects aged 45–69 years). Each serum sample was deeply frozen and stored. In 2008 and...