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GENITOURINÁRNE MALIGNITY

Kalavska K, Sestakova Z, Mlcakova A, Gronesova P, Miskovska V, Rejlekova K, Svetlovska D, Sycova-Mila Z, Obertova J, Palacka P, Mardiak J, Chovanec M, Chovanec M, Mego M.

Detection of Specific Immune Cell Subpopulation Changes Associated with Systemic Immune Inflammation-Index Level in Germ Cell Tumors

Life (Basel). 2022 May 2;12(5):678

The tumor microenvironment (TME) and the host inflammatory response are closely interconnected. The interplay between systemic inflammation and the local immune response may influence tumor development and progression in various types of cancer. The systemic immune-inflammation index (SII) represents a prognostic marker for germ cell tumors (GCTs). The aim of the present study was to detect specific immune cell subpopulation changes which were associated with the SII level in chemotherapy-naïve GCT patients. In total, 51 GCT patients, prior to cisplatin-based chemotherapy, were included in the present study. Immunophenotyping of peripheral blood leukocyte subpopulations was performed using flow cytometry. The SII level was correlated with the percentage of various leukocyte subpopulations. The obtained results demonstrated that SII levels above the cut-off value of SII ≥ 1003 were associated with higher neutrophil percentages. An inverse correlation was found between the SII and the peripheral lymphocyte percentage that logically reflects the calculations of the SII index. Furthermore, the presented data also showed that in the lymphocyte subpopulation, the association with the SII was driven by T-cell subpopulations. In innate immunity-cell subpopulations, we observed a correlation between SII level and neutrophils as well as associations with eosinophil, basophil, natural killer cell and dendritic cell percentages. We suppose that the described interactions represent a manifestation of cancer-induced immune suppression. The results of the present study contribute to the elucidation of the interrelationship between tumor cells and the innate/adaptive immune system of the host.

Orszaghova Z, Kalavska K, Mego M, Chovanec M.

Overcoming Chemotherapy Resistance in Germ Cell Tumors

Biomedicines. 2022 Apr 22;10(5):972.

Testicular germ cell tumors (GCTs) are highly curable malignancies. Excellent survival rates in patients with metastatic disease can be attributed to the exceptional sensitivity of GCTs to cisplatin-based chemotherapy. This hypersensitivity is probably related to alterations in the DNA repair of cisplatin-induced DNA damage, and an excessive apoptotic response. However, chemotherapy fails due to the development of cisplatin resistance in a proportion of patients. The molecular basis of this resistance appears to be multifactorial. Tracking the mechanisms of cisplatin resistance in GCTs, multiple molecules have been identified as potential therapeutic targets. A variety of therapeutic agents have been evaluated in preclinical and clinical studies. These include different chemotherapeutics, targeted therapies, such as tyrosine kinase inhibitors, mTOR inhibitors, PARP inhibitors, CDK inhibitors, and anti-CD30 therapy, as well as immune-checkpoint inhibitors, epigenetic therapy, and others. These therapeutics have been used as single agents or in combination with cisplatin. Some of them have shown promising in vitro activity in overcoming cisplatin resistance, but have not been effective in clinical trials in refractory GCT patients. This review provides a summary of current knowledge about the molecular mechanisms of cisplatin sensitivity and resistance in GCTs and outlines possible therapeutic approaches that seek to overcome this chemoresistance.

Abstrakty a postery z konferencií

Palacka P., Polanova M., Svobodova A., Zigmond J, Zanchetta K., Gombarova V., Vulganova M., Slopovsky J., Obertova J., Mego M., Drgona L, Pechan J.

Antibodies and cell immunity after vaccination with tozinameran (BNT162b2) in workers of National Comprehensive Cancer Center (NCCC) in Slovakia.

J Clin Oncol 40, 2022 (suppl 16; abstr e18774)

Mego M., Vlkova B., Karaba M., Minarik G., Benca J., Sedlackova T., Kalavska K., Pindak D., Mardiak J., Celec P.

Circulating tumor cells and vitamin D in primary breast cancer.

J Clin Oncol 40, 2022 (suppl 16; abstr e12558)

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Phase II study of disulfiram (D) and cisplatin (P) in refractory germ cell tumors (GCTs).

J Clin Oncol 40, 2022 (suppl 16; abstr e17013)