Enhancement of the Efficacy of Chemotherapy with Oxaliplatin Plus 5-Fluorouracil by Pretreatment with IL-2 Subcutaneous Immunotherapy in Metastatic Colorectal Cancer Patients with Lymphocytopenia Prior to Therapy

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Abstract

The present study was carried out to evaluate the influence of a short-period IL–2 administration on the efficacy of chemotherapy in metastatic colorectal cancer patients with pretreatment lymphocytopenia, which was defined as a lymphocyte count of less than 1500/mm$^3$. The study included 144 consecutive metastatic colorectal cancer patients, who underwent chemotherapy with oxaliplatin plus 5-fluorouracil. Lymphocytopenia was seen in 41/144 (28%) patients, who were randomized to receive chemotherapy alone or chemotherapy after a prechemoimmunotherapy with IL-2 (3 MIU twice/day for 3 consecutive days), whereas patients with a normal pretreatment lymphocyte count received only chemotherapy. A normalization of the lymphocyte number was achieved in 12/19 lymphocytopenic patients pretreated with IL-2. The objective tumor regression rate achieved in patients with a normal lymphocyte count prior to chemotherapy was significantly higher compared to that obtained in lymphocytopenic patients treated with chemotherapy alone (54/103 vs. 3/22, p<0.01), whereas no significant difference occurred between patients with normal lymphocyte count and lymphocytopenic patients pretreated with IL-2 (54/103 vs. 8/19). This study confirms that pretreatment lymphocytopenia is associated with reduced efficacy of chemotherapy in metastatic colorectal cancer patients. Moreover, it suggests that pretreatment with IL–2 before the onset of chemotherapy may enhance the efficacy of chemotherapy in lymphocytopenic patients. Therefore, the administration of IL–2 before the onset of chemotherapy to improve the immune status of cancer patients may be considered as a new chemoimmunotherapeutic combination, which may be recommended in the treatment of advanced cancer patients, particularly in those with cancer–related immune alterations.